Project Control and Reporting Guide

Managing Program Delivery at the Project Level




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Preface

Delivery and accountability for the resources that taxpayers and the legislature entrust to us is the top priority of the Washington State Department of Transportation's Project Control and Reporting!

With passage of the 2003 Transportation Funding Package (Nickel), the Washington State Department of Transportation (WSDOT) has entered a new era of line item appropriations and project level provisos. Given this high visibility of projects, it is the goal of the Department to meet its commitment of delivering each of its projects on time, on budget with no surprises.

To help us meet that goal, WSDOT has restructured its project control and reporting policies and procedures. The purpose of this guide is to document the policies and procedures WSDOT has adopted to comply with -legislative reporting mandates and to provide an overview of how they are implemented.

This guide has been developed with extensive input from across the Department. Individuals representing the various capital programs from the modes, regions, and headquarters divisions have contributed their time, knowledge, and expertise to fully capture the details of the policies, procedures, and systems used in the delivery process. This guide truly represents WSDOT's commitment for delivering the Transportation Capital Programs at the project level. It also reflects the One DOT approach that provides consistency between programs while -recognizing the uniqueness of each capital program.

Gregory A. Selstead, P.E.
Director
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Acknowledgments

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Thanks is extended to CH2MHill for providing technical input and writing the document. Special thanks go to Stephanie MacLachlin for writing numerous drafts; and Gregg Hughes, Steven Kambol, and Stan Moon for the valuable information based upon their years of experience and knowledge.
Particular thanks to the review team that gave their time, experience, and knowledge in providing original -information, reviewed the drafts, and provided their valuable comments during the creation of the document. These individuals made up the review team:

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Thanks also go to the numerous individuals who provided additional comments during the final review process. Your participation is greatly appreciated.

Section 1. Executive Summary

The Washington State Department of Transportation's (WSDOT) business is the operation, preservation, and improvement of the state's multimodal transportation network, which includes highways, rail, and the nation's largest ferry system. As such, the Department's core responsibility is the delivery of projects. Project delivery begins with the programming of a given project (that is, its inclusion in the state's Capital Improvement and Preservation Program); extends through design, right of way, and construction activities; and, terminates once the project is "operationally complete," or ready to serve its purpose.

WSDOT is dedicated to a long-standing commitment to deliver its projects within approved scopes, schedules, and budgets. Performance in delivering projects is the most important indicator of how well the Department is doing its job and living up to this commitment.
While many of the Department's activities (such as hiring and developing staff) support its project delivery objectives, none do so more directly than the Department's integrated system of project control, reporting, and management, the subject of this document.

Legislative Direction for Project Control and Reporting

Over the past two legislative sessions, WSDOT has received direction from the Legislature regarding project management, control, and reporting procedures. This direction has the effect of increasing the level of legislative and public access to information on WSDOT's management performance. The Legislature provides opportunities for the Department to build upon its continuous project delivery improvements. Recent examples of the Department's improvements in project delivery over the past several years include the following:

- Development of a statistically rigorous Cost Estimation Validation Process, which is being emulated nationally;
- Creation of the Ferry System Terminal and Vessel Life Cycle Cost Model;
- Utilization of design-build delivery models (as opposed to the traditional design-bid-build standard), which can reduce overall project - delivery time and allocate risk between the Department and its contractors; and
- Implementation of numerous business process and technology improvements, such as automation of the work order authorization process. Work order authorization is the keystone of financial control at WSDOT. As such, it necessarily involves a complex system of checks and approvals. Replacement of the paper-based system, in which forms were routed sequentially, has been replaced by a system that automates concurrent routing, eliminates paper, and allows instant identification of a work order's status and location.

The Legislature's drive to strengthen WSDOT project control and reporting is related to passage of the 2003 Transportation Funding Package, in particular. However, all WSDOT projects and the system within which they are developed and delivered are affected. One objective of this document is to describe how the Legislature's direction, as expressed in law from both 2003 and 2004 sessions, is being implemented by WSDOT. Its broader purpose is to describe WSDOT's project control and reporting system as the framework that structures the Department's delivery of the projects funded by the Legislature.

Intended Audience

Following are the primary audiences for which this document is intended:

- The Transportation Commission, the Legislature, and their respective staffs, as a means of communicating how WSDOT is meeting the intent of the 2003 and 2004 legislation;
- WSDOT executives and staff in the regions and
- among the transportation modes, so that they can understand their roles and responsibilities in executing the legislative direction in concert with the rest of the Department.

2003 Transportation Funding Package: "Nickel Program" Development, Control and Reporting

In 2003, the Washington State Legislature approved the first state gas tax increase since 1991. The package included a five-cent a gallon increase on gasoline (along with a number of other transportation-related taxes and fees)1. Revenues from the gas tax increase and the added gross weight fees for trucks are deposited into a new account: the 2003 Transportation Funding Package (Nickel) account. Meanwhile, the increase to the sales tax on vehicles and the license plate retention fee is deposited into the existing Multimodal Transportation Account.

At the same time that the Legislature approved the gas tax package, it drew up a list of specific projects on which the increased revenues could be spent. This list, the centerpiece of the 2003 Transportation Funding Package, contained over 150 separate roadway, rail, and ferry projects. The revenues from the increased taxes and fees will be leveraged with bonding over a 10-year period—in all; they represent an investment of over $4.1 billion. Revenue estimates are updated regularly to ensure that planned Nickel Program expenditures are balanced with revenues.

In addition to specifying the "Nickel Projects," on which the new revenues must be spent, the Legislature also wrote into law new control and reporting requirements for these projects; as a result, the Nickel projects are subject to greater legislative oversight and control. Unlike previous budgets, the new gas tax revenues are budgeted on a line-item basis for specific projects with little latitude for change without legislative approval. In addition, shifts in schedule and budget among Nickel projects are subject to higher levels of legislative control than projects that are funded out of preexisting funds, commonly referred to as "Non-Nickel" projects.

1 Other taxes and fees that have been increased under the 2003 legislation are an increase on gross weight fees for trucks, an additional 0.3% sales tax on new and used vehicles, and a license plate retention fee.

Nickel Projects: A Key Subset of the WSDOT Program

While they are a highly visible part of the WSDOT program, it is important to keep in mind that there are hundreds of Non-Nickel projects. These projects are also subject to WSDOT's system of project control and reporting, although the business processes and approval levels for Nickel projects are more stringent.

Although the Department has more options for managing Non-Nickel projects, it is the Department's policy to maintain all projects within the budgeted cost, scope, and schedule, changing them only when new conditions require change or when it is in the State's best interest to incorporate a change. It is also the policy of the Department to report routinely to the Legislature any major project changes, regardless of funding source, and the status of the various - transportation programs.

The 2004 Supplemental Budget Package: Control Requirements for All WSDOT Projects

The Legislature's bolstering of project control and reporting requirements expressed in the 2003 Nickel Funding Package was furthered in the 2004 supplemental budget legislation, requiring WSDOT implement new management tools to demonstrate that the agency monitors scope, schedule, and budget for all its projects, regardless of funding source. This language is contained in Sections 302, 303, and 304 of ESHB 2474:

> "The Department shall work with the transportation committees of the Legislature to agree on report formatting and elements. Elements shall include, but not be limited to, project scope, schedule and costs. The Department shall also provide the information required under this subsection via the Transportation Executive Information System."

This language is notable because it is the first time that the Legislature has issued such specific requirements for WSDOT project management and reporting. The new project management requirements set by the Legislature are not the only changes in project delivery at WSDOT. Since his 2001 appointment by the Transportation Commission, Secretary Doug MacDonald has restructured the Department to emphasize project accountability and delivery.

A key change at the Headquarters level was the separation of the Program Management Office into two separate sections in 2003 (Figure 1). The first section, the Strategic Planning and Programming Office, was created to align program development with transportation system planning. Uniting program development and transportation planning will streamline development of the Washington Transportation

Plan (WTP) update. The second section, the Project Control & Reporting Office (PC&R), is responsible for measuring performance, controlling change, and reporting on the Department's project and program delivery performance to the Legislature and the public. The result of the Legislature's direction and the Department's reorganization is that many of the programming, control, and reporting procedures documented in the *Programming and Operations Manual*, last updated in 2001, have changed.

The purpose of this document is to take the first step toward documentation of WSDOT's evolving project control and reporting system by setting forth a high-level framework. Detailed instructions regarding project control and reporting requirements, including process flows and data input requirements, will be provided in a later volume of this report, which will serve as a desk reference for day-to-day WSDOT business.2

One WSDOT: Consistency in Project Control and Reporting

WSDOT is organized into six geographical regions plus the Urban Corridors Office (which manages major state highway corridors in the Central Puget Sound area), several modal divisions and statewide oversight through a central headquarters. While the majority of WSDOT projects are devoted to roadway preservation and improvements, the Department also delivers other non-highway capital projects, including those developed under the following WSDOT "modes."

WSDOT's Major Non-Highway Modes

Washington State Ferries

Washington State Ferries (WSF) plays an important role in the state transportation system. It is a vital link in east-west highways carrying people and freight from one side of Puget Sound to the other. The Ferry System serves the region's commuters in eight counties and provides island-mainland and inter-island transportation. In FY 2003, 25 million riders and 11 million vehicles used the system's terminal and vessels.

WSF's infrastructure includes terminals, vessels, and maintenance facilities. The Ferry System operates 20 terminals that provide vessel reception; customer access to and clearance of terminal facilities; vehicle and passenger staging, holding, loading and unloading facilities; and connections with other modes of transportation. The fleet consists of 28 vessels, which accommodate vehicles and/or passengers and operates a major maintenance facility at Eagle Harbor.

WSF has the largest capital program after the highway Preservation and Improvements Programs. WSF's construction program performs the same program/project development, control, and reporting functions as other highways programs. Also, its methods and procedures are similar. However, WSF's capital program must support ferry service delivery. So, WSF capital program management occurs largely within WSF's organizational structure rather than the highway organizational structure. Nevertheless, WSF is committed to producing products that can be integrated with other highway programs.

Washington State Department of Transportation Rail Office

WSDOT's Rail Office operates in three primary areas: (1) Freight Rail, (2) Rail Safety Improvement, and (3) Passenger Rail.

- In the area of freight rail, the Rail Office provides loans and grants to rail districts, port districts, counties, economic development councils, cities, and private railroads to support light-density rail lines; to improve rail access to ports; and to preserve or restore rail corridors and infrastructure. It can do this through loans for essential projects on private property, and through grants and loans for essential projects on public property.
- In the area of safety, the Rail Office administers the federal Railway/Highway Crossing Program, a grant program to fund safety improvements to reduce the number of fatalities, injuries, and crashes at public grade crossings through improvements including grade separation of -highway and rail movement.
- Finally, in the area of passenger rail, the Rail Office is partnering with local, state, and private sector stakeholders to develop passenger service along the corridor extending from Vancouver, B.C., to Portland, Oregon, as part of a balanced transportation system. Over the next several decades, the state plans to make capital investments including track improvements, safety -systems, and train equipment and stations in order to accomplish this.

2 WSDOT's programming and project control and reporting functions, once housed together under the Office of Program Management, have been separated. Functions related to developing the highway construction program are now organized under Strategic Planning and report to the Chief of Staff. Functions related to Project Control and Reporting are managed by the Assistant Secretary of Engineering and Regional Operations. When programming and project control were housed together, it made sense to have a single Programming and Operations Manual. Separate documentation of the programming process in the reorganized structure is underway.

Figure 1.WSDOT Organization Chart

The Rail Office's project development, measurement, and reporting processes parallel those of core department capital programs in many respects. However, there are some significant differences, due in most part to the fact that rail projects cannot be funded out of the Motor Vehicle **Account**, because of the constitutional prohibition against using this source for anything but highway or ferries projects. These differences are treated on an exception basis in the Section 4, "Managing Project Expenditures and Changes."

Washington State Department of Transportation Traffic Operations

WSDOT's Traffic Operations Division receives specific funding with which to develop capital projects aimed at improving the efficiency and safety of the existing system as opposed to building new capacity. Traffic Operations projects center on the implementation of techniques such as intersection and freeway management systems, traveler information, weather-sensing technology, weigh-in-motion capacity for freight transportation, and the hardware and software associated with all of these technologies.

Traffic Operations project development, measurement, and reporting processes parallel those of core department capital programs with minor exceptions.

Washington State Department of Transportation Highways and Local Programs

Highways and Local Programs works in cooperation with, and through the Regional Local Programs Offices in WSDOT. Regional Local Programs offices are located in each of WSDOT's six regions throughout the state. They are the direct link with local agencies and partners such as tribal governments, ports, and transit. The primary responsibility of the region office is to manage the federal and state funds available in a manner that allows the agencies to be successful in their transportation endeavors. At the same time, the regional staff assists agencies in their compliance with program requirements. They guide, counsel, and collaborate with these agencies project scoping, funding, design, and environmental documentation, construction, and project closure.

Highways and Local Programs project development, measurement, and reporting processes parallel those of core department capital programs with minor exceptions.

Washington State Department of Transportation Facilities

WSDOT's Facilities program provides workplaces to house staff and equipment that design, operate, and maintain the state highway system. With 2.5 million square feet of building space, WSDOT is the second largest general government-building owner in the state, behind General Administration. WSDOT's 500 sites and 700 buildings, the asset replacement value of which is nearly one half billion, are located throughout the state. The Facilities organization manages facilities throughout the life cycle (planning, acquisition, design, construction, -operations, maintenance, and disposal).

State funding is provided in a separate and distinct program. **Major capital projects are typically limited to less than 10 per biennium.** Facilities project development, measurement, and reporting processes parallel those of core department capital programs, utilizing the same core agency systems, plus others, to track expenditures and variances. Delivery is reported in the same manner as other agency capital programs.

A Framework for Standardization

As WSDOT's Project Control & Reporting Office (PC&R) develops its framework, a key objective is to ensure enough standardization of data and processes so that comparable analyses and management controls can be applied across modes and regions. Without basic standardization, it is not possible to perform meaningful analyses, to implement improvements efficiently, or to provide a consistent status of the Department's performance. To this end, staff from Headquarters work continuously with regional and modal program managers to ensure the comparable data and standardization in project control and -reporting.

Such standardization helps WSDOT employees understand the Department's business objectives and their roles in achieving them. It also provides the platform for communication of a clear and consistent message regarding the Department's performance to decision makers outside WSDOT. Enhanced communication based on consistent data and procedures will result in greater trust in the Department's management of the State's transportation resources and ultimately in increased support for the funding needed to provide transportation facilities and services.

Differences in project control and reporting processes from the "norm" set by the Highway Construction Program are treated on an exception basis in this document.

The Principles Underlying WSDOT's Project Control & Reporting System

As noted, the purpose of WSDOT's Project Control & Reporting System is to ensure that policies, procedures, and tools are in place and applied at every level and in every unit of the Department to ensure that the Department fulfills its responsibility by delivering its capital program—in short, getting projects done and open to use, on time, within budget, and with no more and no less functionality than scoped.

In cases where the Department does not meet 100 percent of its project objectives, it is the responsibility of PC&R to report the causes and effects of the underlying issue

promptly so that: (1) policy makers and the public have an objective understanding of the problem; (2) so that corrective action can be applied early; and, (3) so that the Department can analyze problems, learn from the experience, and avoid them in the future.

The following principles are the basis for WSDOT's Project Control & Reporting System:

- A "no surprises," early warning approach, which is critical to the Department's ability to act early and aggressively to prevent or minimize changes in project scope, schedule, or budget
- Frequent, consistent, data-driven project and program performance reporting on a regular schedule, as opposed to discretionary, ad hoc self-reporting; and
- Increased independent access to information on WSDOT program and project management - performance.

The Components of WSDOT's Project Control & Reporting System

WSDOT's integrated system of project control and reporting provides the Department with tools and processes to monitor, control, and report on project and program performance. While the business processes and threshold levels used to implement the system vary among modes and funding sources, the basic framework applies to all projects. The components of this framework, overviewed in this section, and detailed elsewhere in the document, are as follow:

- Cost Estimating Validation Process; Cost Risk Assessment; and Scope, Cost, & Risk Evaluation
- WSDOT's Executive Review Board;
- Project Controls; and
- Project Reporting.

Cost Estimating Validation Process (CEVP)

The first step in good project control is establishing and maintaining an accurate project schedule and cost estimate at the very start of the project process. In 2002, WSDOT began tackling the issue of improving the management of project cost schedule with the implementation of a new cost estimating process that focuses on estimating and managing risk. WSDOT began a new effort at the project level to identify and quantify risks that can impact the budget and schedule of individual projects. The Department uses three tools to help identify and communicate the risks associated with a project to help maintain project cost integrity:

1. CEVP is an intense workshop where transportation projects are examined by a team of top engineers and risk managers from local and national private firms and public agencies reviewing project details with WSDOT engineers. The CEVP workshop team uses systematic project review and risk assessment methods to evaluate the quality of the information at hand and to identify and describe cost and schedule risks.
2. Cost Risk Assessment (CRA) is a highly structured approach to incorporate consideration of uncertainty in project modeling and management. A specific project is represented by the project team who participate actively and are the primary beneficiaries of the CRA. As a dynamic process, a CRA may be conducted at several times during the development of the project to evaluate uncertainty and degree of risk in cost and schedule.
3. Scope, Cost, & Risk Evaluation (SCoRE) is a peer-level review of the "due diligence" analysis of the scope, costs estimate, and risk for transportation projects. SCoRE applies a similar, but abbreviated and less rigorous, version of the CEVP process, including anticipated uncertainty and variability.

WSDOT's Executive Review Board

Within WSDOT, executive direction and oversight for project control and reporting is provided by the newly convened Executive Review Board, which comprises the following members:

- The Assistant Secretary for Engineering and Regional Operations,
- The Secretary's Chief of Staff,
- Modal Directors,
- The Director of Environmental & Engineering Programs, and
- The Director of Project Control & Reporting.

The Executive Review Board performs many of the functions formerly done by the Department Project Screening Board, a panel of Department executives that meet periodically to consider proposed changes to project scope, schedule, or budget. In the past, project changes went through a review and approval process using a Change Management Form. The proposed change was reviewed by the program managers and approved at various levels in PC&R depending on the significance of the change (as indicated by cost and percentage thresholds). If the change was major, it was forwarded to the Department Project Screening Board, a panel of WSDOT executives that met as needed to deal with proposed changes.

Although the Screening Board process provided executive management input to major changes, the timing was usually fairly late in the process, sometimes limiting decision options. In contrast, the Executive Review Board has been structured to provide early, continuous project monitoring and control. The primary forum for the Executive Review Board's activities is the Quarterly Review Process.

The Quarterly Review Process

To conduct its Quarterly Reviews, the Executive Review Board travels to each region for a half- to full-day meeting prior to the close of each quarter. Meetings are also held with each mode. The agenda for these meetings generally includes the following elements:

- Presentations by the responsible project engineer on every Nickel Project, regardless of whether there is any anticipated or actual variance from the baseline scope, schedule, or budget;
- Presentations by project engineers on other -projects of regional or statewide significance;
- Presentations by the regional or modal -administrator and/or their designee on overall -program delivery; and
- Discussion of and action on proposed scope, schedule, and budget changes that require Executive Review Board authorization.

The Quarterly Review process is designed to provide the following:

- Continuous, systematic monitoring and control of all Nickel projects as well as other projects of regional and statewide significance;
- Early identification of potential and actual risks to project scopes, schedules, and budgets;
- A forum in which representatives from Headquarters and the regions or modes can -collaborate on strategies to avoid or mitigate -project changes; and
- Firsthand information for WSDOT Headquarters staff to report to the Secretary of Transportation, the Transportation Commission, and legislative staff.

These meetings are in effect an "early warning system" that allows PC&R and WSDOT executives to anticipate and manage project and program issues at the statewide level. Meanwhile, these meetings provide additional benefits, such as the opportunity for the regions and modes to strategize jointly with executives from Headquarters on the best way to address project challenges—both individually and within the context of overall program delivery.

In addition to conducting the Quarterly Reviews, the Executive Review Board has broader functions as well:

- Assistance to, support of, and coordination with the regions and modes for project and program problems and issues as they develop;
- Executive oversight of program and project -delivery by region and mode;
- Review and approval of reports submitted to the Legislature; and
- Approval of projects to proceed to the Transportation Commission for those project changes requiring Legislative action.

Besides the routine quarterly meetings with each region and mode, the Executive Review Board also convenes as needed to address issues that require immediate executive approval, such as final approval of proposed program adjustments during budget preparation.

Control of Project Changes

WSDOT has two primary mechanisms in place to monitor and control project scopes, schedules, and expenditures. The first is the Project Control Form, and the second is the Work Order Authorization Form.

The Project Control Form

When a change to project scope, schedule, or budget is needed on a project, a request for approval of the change is submitted to the appropriate level via a Project Control Form. The Project Control Form provides the reviewer and approver a detailed description of the project's current status for the cost, scope, and schedule; the need for the change; the change itself; and a proposal as to how the change will be accommodated within in the budget. Requesters also provide insight on lessons learned—that is—what WSDOT can do to anticipate and avoid similar changes in the future. For Non-Nickel projects, approval levels range from minor (approved in the region) to major (approved by the Executive Review Board). As provided in the 2004 Supplemental Budget, the Transportation Commission approves all cost changes to Nickel projects that can be met by the financial plan as long as the scope remains unchanged and the overall program can be delivered. The Transportation Commission can also approve cash flow adjustments near biennial lines. Project changes that fall outside this criteria must be approved by the Legislature.

Work Order Authorization

WSDOT's Work Order Authorization process is the second control process. It has been used by WSDOT for decades to control the actual expenditure of funds. All WSDOT expenditures must be approved through the work order authorization process using the same approval levels as for Project Control Forms.

WSDOT recently automated the work order -authorization process, which allows for organizational variances among the modes and regions in terms of the routing of approvals. However, required inputs are the same across modes and regions, and the endpoint is the same—a single process for the -authorization of funds. Section 4 describes the work order -authorization process in some detail.

Project Reporting

Measures, Markers and Milestones – The "Gray Notebook"

Whereas the Project Control Form process is the official detail-level approval process for project changes, and Work Order Authorization is the official approval process for funding approved project changes, the WSDOT *Gray*

Notebook is the Department's formal reporting tool. Its "Beige Pages" are the formal reporting tool for Nickel projects in particular. This is where the Department tracks and reports the status of all Nickel projects from start to completion with early notification of potential changes as well as accounting for actual project adjustments. All other projects are summarized within their individual capital programs and reported in the *Gray Notebook's* "White Pages."

Summary of Adjustments to Project Delivery

Each quarter, a report summarizing the current status of all Nickel projects and any proposed changes is prepared for review and approval by the Transportation Commission, and reported to the Legislature through legislative staff. The *Summary of Adjustments to Project Delivery* shows any changes in project costs from the budget, shifting of funds between biennia with reasons for any variances.

Project Status Report

Sometimes referred to as the "Gantt Charts," the *Project Status Report* takes the *Summary of Adjustments to Project Delivery* report and adds a graphical presentation of six key milestones on a timeline for a consolidated look at the status of project expenditures and delivery activities.

Once the current status is reported in the *Gray Notebook*, the Department further reports additional information on each Nickel project and significant Non-Nickel projects on the Department's Internet Home Page at www.wsdot.wa.gov in two formats: (1) a Project Page and (2) a **Quarterly Project Report (QPR)**. Project pages are found with the link "Nickel Funding Package Project List" under the heading "Projects." Meanwhile, QPRs are found using the links in the left-hand margin of each Project Page.

Project Pages

Fed by information in the *Gray Notebook*, the Project Pages provide in-depth information on each project describing the overall project vision, funding components, financial tables, milestones, current status, risk challenges, and forecasts. The Project Page is fairly lengthy with detailed information including photos, drawings, and other graphics to give a complete description and status. The intent of the page is to provide the reader an extensive overview of the project.

Quarterly Project Reports

Meanwhile, the Quarterly Project Reports (QPRs) provide a quick but thorough snapshot of the project's current status including project highlights, milestones and their status, brief statements on the transportation problems being addressed by the project, any delivery challenges, a summary financial table, and an -expenditure graph.

The components of WSDOT's Project Control & Reporting System are depicted in Figure 2.

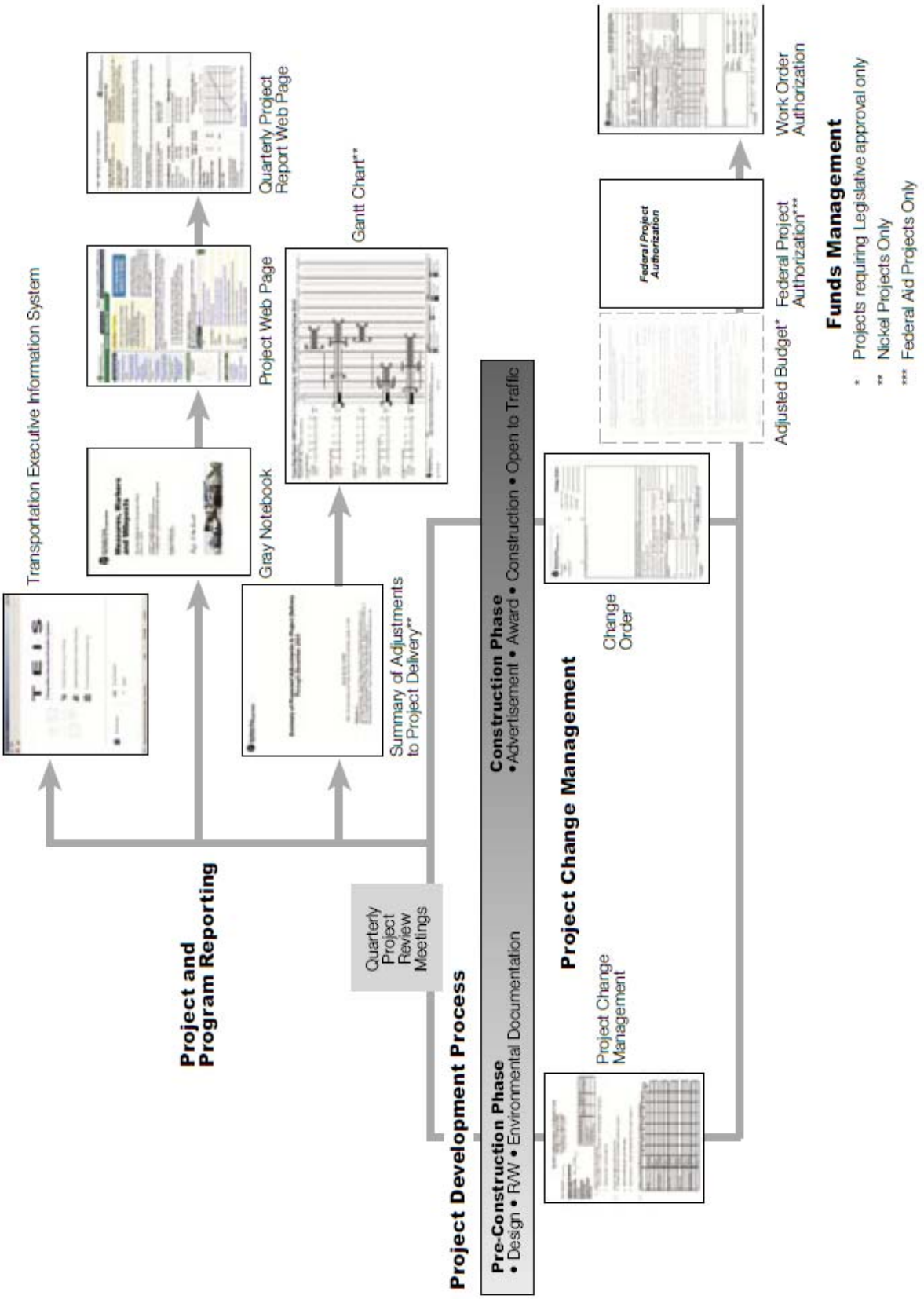

Figure 2. Project and Program Reporting

Section 2. Building the Capital Program

Overview

This section summarizes the process by which WSDOT projects are planned, programmed, and budgeted. The Department's business is organized into separate programs for budgetary and management purposes. At the highest level, a distinction is made between Operating and Capital programs. Because WSDOT projects are funded in the Capital Program, this section focuses on that aspect of the Department's business.

WSDOT's overall capital program is referred to as its Capital Improvement and Preservation Program (CIPP). The CIPP is a rolling 10-year plan, divided into five biennia. The first two years of the CIPP constitute the construction plan for the current biennium, while a summary of known projects and program funding objectives are specified within the CIPP for the following four biennia. Projects listed in the first biennium of the CIPP are specified in greater detail than those programmed for out-years. In the outermost biennia, project details give way to lump sum funding levels proposed for various categories of work.

For capital program planning and management purposes, the CIPP is comprised of by six major programs. Major programs include the following:

1. Highway Preservation
2. Highway Improvements
3. Rail
4. Facilities
5. Traffic Operations
6. Washington State Ferries

The CIPP is supporting documentation for the Transportation budget request. The structure of WSDOT's Highway Preservation and Improvement and Improvement Programs are depicted in Figure 3.

The programming and budgeting processes are conceptual and practical, respectively. The planning process provides the foundational development of the budget estimates. Meanwhile, the programming process then balances revenues and requirements to develop the transportation program.

Roles and Responsibilities in Capital Program Development

Transportation planning and programming in Washington is a collaborative process among units of state, regional, and local government, which bear collective responsibility for identifying transportation system needs and deficiencies; establishing near- and long-term plans to address them; generating and allocating revenue; and efficiently managing the entire process. **Figure 4 depicts the transportation and revenue funding structure.** The Washington State Legislature prepares state budgets, funds appropriations and monitors the performance of state agencies and programs.

Transportation Planning

Transportation planning is undertaken at all levels of government in Washington. It can be characterized as a complex set of interlocking processes that culminate in a collective vision. From this vision a path forward that addresses long-term transportation needs by employing all transportation modes. This subsection overviews the transportation planning process in the State as it relates to WSDOT's planning and programming activities.

State Transportation Policy

The Washington State Transportation Commission oversees the Department's budget. It also proposes transportation planning and budget recommendations to ensure that the Department delivers an efficient, quality, multi-modal transportation system.

As part of its responsibilities, the Commission periodically prepares a State Transportation Policy document, which is submitted to the Legislature to fulfill state and federal planning requirements. This document serves as the framework for development of the WTP.

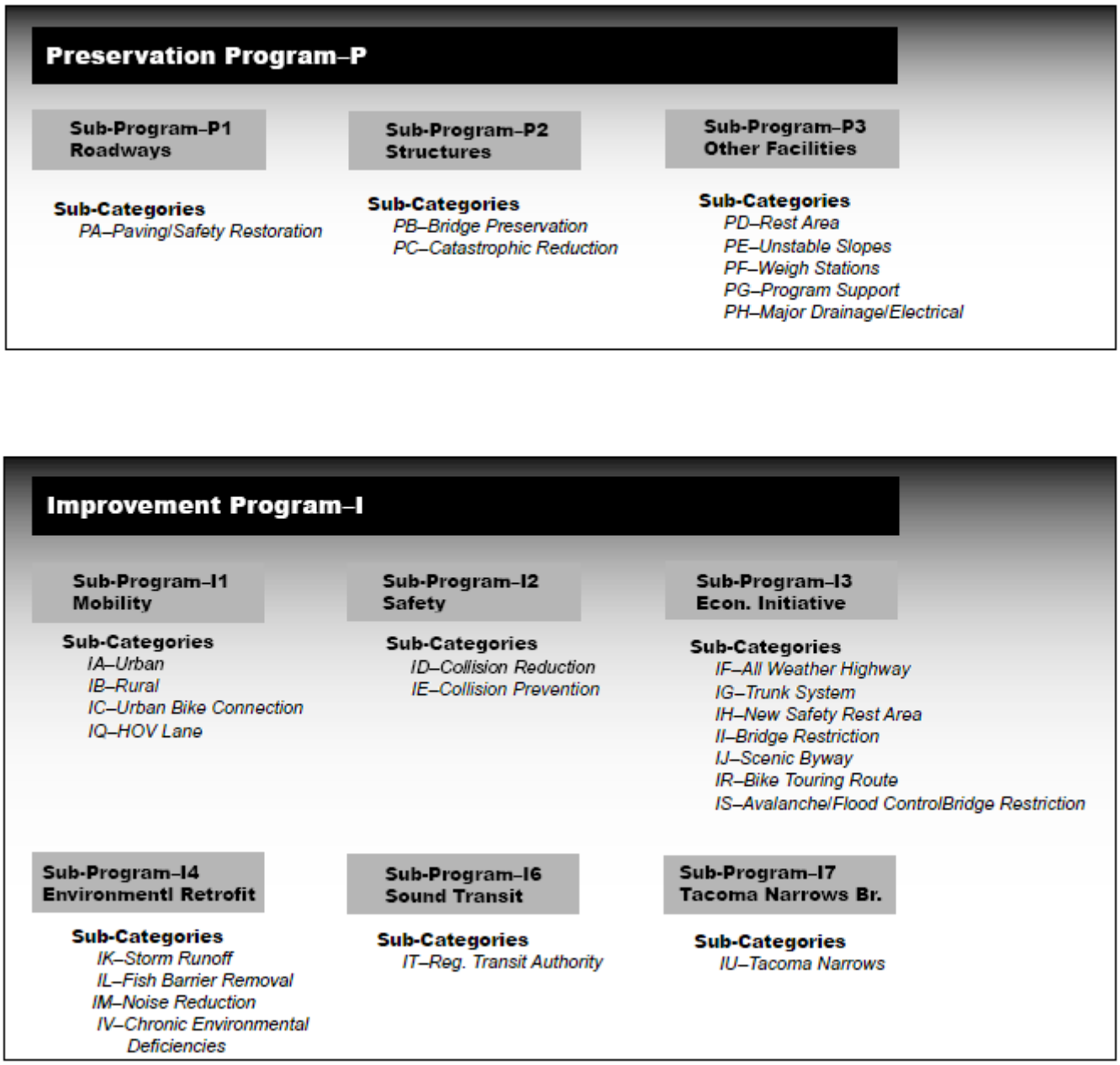

Figure 3. WSDOT's Highway Preservation and Improvement Programs, Subprograms and Categories

The Washington Transportation Plan

The WTP is a comprehensive 20-year vision for State-owned and/or operated transportation modes, which provides an overview of the current conditions facing the statewide transportation system. It also comprises an assessment of current and future needs, and a blueprint for potential solutions and investments. It strategically links state, local, and regional transportation plans into an integrated whole. With WSDOT's assistance, the Washington State Transportation Commission compiles and prepares this document, which it submits to the Legislature for consideration in developing funding levels and priorities.

Local and Regional Planning

Local and regional governments in the state provide a range of input to the diverse State-owned and State-interest components of the WTP through their respective planning processes and collaboration with WSDOT's regions and modes. The ultimate product of these collective planning efforts is the Statewide Transportation Improvement Program (STIP). WSDOT issues this document jointly every two years by WSDOT with the State's Regional Transportation Planning Organizations to the Federal Highway Administration and the Federal Transit Administration. The STIP provides a 3-year investment strategy across all modes and levels of government for federally funded and regionally significant projects.

Revenues, Funds, and Budgets

Revenue is the lifeblood of all state agencies, programs, and projects. As such, the availability, equitable allocation, and efficient management of revenue are critical to delivering and maintaining a balanced transportation system. This section provides an overview of revenue sources, transportation funding, and program budget allocations as they relate to the State's transportation agencies and programs. The structure is depicted schematically in Figure 4.

State Revenue Sources

The State collects revenue from a number of sources, chief among which are user fees, licenses, and taxes. The foremost generator of transportation revenue is the gas tax, which funds approximately one-third of the State's transportation budget. Three principal state-imposed and state-collected sources of revenue are available to fund transportation in Washington:

1. Motor fuel taxes (especially gas taxes);
2. Licenses, permits, and fees for using the transportation system.

State revenues are deposited into the Motor Vehicle Fund and the 2003 Transportation Account. These funds are appropriated to the Department along with federal and local funds in the biennial Transportation Budget Bill passed in odd-numbered years.

Supplemental budgets may modify the biennial budget in even years. Legislative appropriations in these budget documents for the highway construction program are provided for preliminary engineering, right of way acquisitions, and construction work. Further conditions and limitations on the use of state appropriations may be specified in budget proviso language. State funds may also include bond proceeds.

Federal Transportation Funding

Federal funding is the second greatest single source (in the vicinity of 33 percent). The relationship between WSDOT and the Federal Highway Administration, which administers federal transportation funding, is a funding partnership. The Federal Highway Administration federal-aid highway program is structured as a reimbursable financing program in which states incur charges, which they pay, and are then reimbursed, according to requirements set by the Federal Highway Administration. This approach allows states to decide which projects to deliver, how they should be delivered, and how they should be contracted.

The amount of funding available to each state is set by Congress each year, based on a formula that takes into account elements including:

- Population,
- Vehicle lane miles of roadway,
- Vehicle lane miles of travel,
- Historic funding levels, and
- State's share of receipts in the Highway Trust Fund.

The authorized amounts distributed to WSDOT represent lines of credit that the Department can draw upon as federally assisted projects are advanced. Under the federal-aid program, the federal government reimburses WSDOT for costs actually incurred on projects based on a federally established *pro rata* for determining the federal and state share of formula funds. For example, the federal share is 90.66 percent and the state share is 9.34 percent for Interstate Maintenance formula funds. Congress may also designate funds to specific projects in the Transportation authorization bill or in the annual USDOT appropriation, a practice referred to as earmarking.

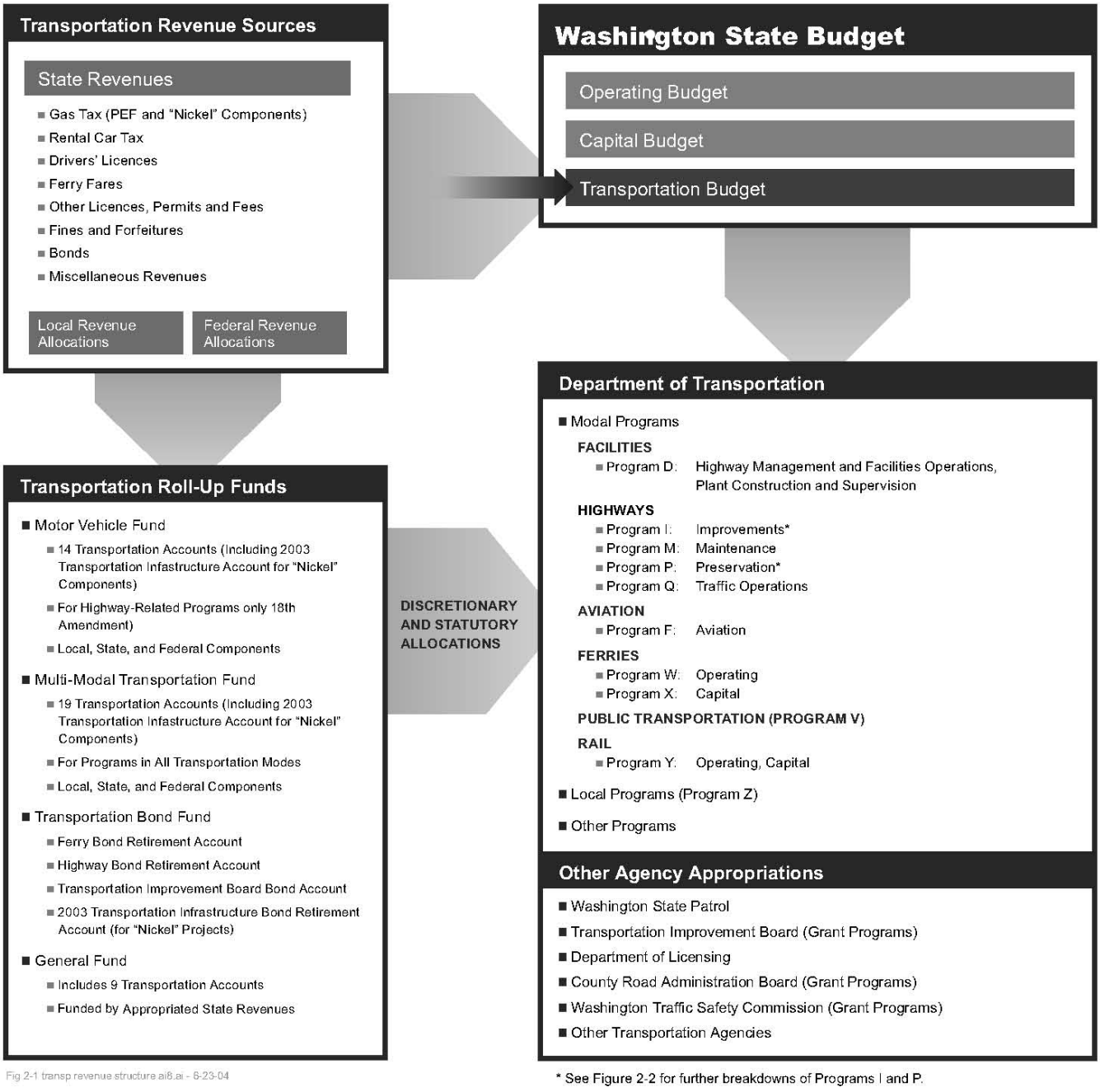

Figure 4. Transportation and Revenue Funding Structure

Local Transportation Funding

Various local revenue allocations round out the remainder of the state's transportation funding. Local funds are reimbursements for work done on the state highway system from sources other then the Motor Vehicle Fund, the Transportation Fund, or the Federal Trust Fund. Examples of sources for these funds are local agencies such as cities or counties or funds received directly from a developer. Federal funds that come to WSDOT through local agencies or through federal agencies other than FHWA are also categorized as local funds.

Transportation Accounts

Revenues from state, **federal reimbursements**, and local sources are deposited into State accounts from which distributions are made across a broad range of transportation purposes. With the exception of a few non-appropriated accounts, revenue cannot be spent unless it has been appropriated by the Legislature. Appropriations must specify the account from which revenue will be provided for a certain purpose. Three basic Transportation Accounts (funds) are used to manage appropriations for the State's transportation programs:

- **Motor Vehicle Fund**: The 18th Amendment to the State Constitution restricts the accounts -comprising this fund to use on highway and -ferries programs and related activities only. Neither transit, nor rail, nor air transportation may be funded using Motor Vehicle Fund dollars.
- **Multi-modal Transportation Fund**: Accounts in this fund can be used for any and all transportation modes, technologies, and related programs (including public transit).
- **Transportation Bond Fund**: This fund contains accounts that serve as repositories for Motor Vehicle Fund revenues that are used for debt -service on highway and ferries bonds.

Budgets

The Transportation Budget is one of three primary components of the overall Washington State Budget passed by the Legislature. Approximately 80 percent of the Transportation Budget is appropriated to the Department of Transportation; the remainder is distributed among the Washington State Patrol, the Department of Licensing, grant programs, and other transportation agencies.

WSDOT funding is appropriated at the program or modal level. The Department may further allocate funds to each of its regions (including the Urban Corridors Office) in accordance with the Capital Improvement and Preservation Program approved by the Commission. A new feature of the 2003 Transportation Funding Package is "Nickel Projects". Nickel Projects are financed with revenues from the State gas tax and other user fees enacted by the Legislature in 2003. These projects are directly funded and managed on a line-item basis rather than collectively, as are projects funded using pre-existing revenues.

Project and Program Building

WSDOT program building is an integral part of biennial budget development for the WSTC and the Legislature, and a nearly continuous process. This process is overseen by WSDOT's Strategic Planning and Programming Office, supported by a number of other organizations within the WSDOT planning and programming community, including the various regional and program offices for each of the modes. The offices of the Pavement and Soils Engineer, the Equipment and Facilities Administrator, the State Traffic Engineer, and the Washington State Patrol's Weigh Master provide key support.

Long-term transportation system needs and solutions are identified, prioritized, and programmed within the financial constraints of forecasted revenues over the specified planning period by means of the assorted planning efforts referenced above. At the end of this process, a balanced list of new and carry-forward projects is defined and aligned within the Department's programs and proposed budget to address the highest priority needs across all modes.

Organizational Structure and Responsibilities

Within the Department's program management structure, the Strategic Planning and Programming Office is responsible for statewide capital program development. Their activities primarily focus on the Highway Construction Program (WSF manages their own capital programming efforts). Program building efforts are supported by the various planning, technical, and financial organizations within the Department.

The Department's Executive Management provides guidance on policy issues, project prioritization, and funding allocations. The WSTC in turn, sets global policy for WSDOT, determines program funding levels, and approves the overall program of projects (the CIPP) that is submitted to the Legislature for consideration in developing the Transportation Budget. PC&R coordinates management and -performance measurement activities once the budget has been passed.

Identifying Needs and Prioritizing Solutions

Washington State's Priority Programming Law (RCW 47.05) requires a rational selection of projects and services according to factual need. It also makes the evaluation of life cycle costs and benefits an integral part of programming to ensure that program objectives are maximized within available revenue.

Needs, goals, and objectives are laid out in the WTP. Since funding is not available to meet all of the identified needs, priorities must be set. Priorities are typically focused on preserving existing assets by first funding maintenance, operations, and -preservation programs. Tradeoff decisions must be made to distribute any remaining funding among capital improvement areas.

Each category of work within a particular capital program has a particular set of needs that are ascertained by comparing a specific action strategy in the WTP to the conditions and capabilities of existing facilities. Projects developed with preliminary estimates of cost that will address the identified needs. The projects for each category of a program are then prioritized (selected) based on the potential benefits returned to the transportation user.

The prioritization process includes a provision to align priorities to minimize implementation costs and construction impacts. For example, if a set of projects to solve a list of needs for a given facility or route section would have prioritized within a 6□year time frame, then the priorities may be adjusted to combine the work into a single contract.

Each of the modes employs its own set of tools and processes to evaluate existing conditions, deficiencies, and needs. These tools include methodologies for ranking and compiling needs and deficiencies into prioritized project lists.

Highways

The Highways Program uses the Priority Array Tracking System (PATS)3 to monitor prioritized highway deficiencies and solutions against each Highway System Plan (HSP) action strategy in each region for over 30 roadway infrastructure elements. PATS has the ability to match deficiencies with programmed projects in the Capital Project Management System (CPMS) and is used as part of the program building process. The regions are required to program a project or provide a justification for not programming a project for each need identified in PATS. Prioritization data is fed to the system by various asset management subsystems that are tailored for each of the 30+ roadway elements, such as the Washington State Pavement Management System and bridge condition surveys.

Washington State Ferries

WSF's investment process consists of seven steps depicted in Figure 5. The process starts with collecting information about investment needs. The primary sources are WSF's Life Cycle Cost Model (LCCM), the Ferry System Plan (FSP), and the Problem-Opportunity Statement process. WSF compiles and analyzes this information to produce a study of capital investment needs. Solutions to these needs are developed, analyzed, and compared. Preferred solutions become proposed projects. These projects are grouped into the policy areas established by the Legislature, the Governor, the Transportation Commission, and regulatory agencies. Based on the financial plan, WSF's Capital Committee recommends projects that should be funded to WSF's Chief Executive Officer, the Transportation Commission, the Governor, and the Legislature. WSF delivers the approved program and measures its performance. Successful execution of the capital program ensures that WSF's terminals and vessels will provide reliable and responsible service to Ferry System riders.

Facilities

WSDOT's Facilities Program uses the deficiencies and capital renovation and replacement project needs identified its 10-year plan as the basis for developing project lists. Estimates are developed for potential solutions and then benefit-cost and other economic analyses are undertaken in conjunction with lease versus own, consolidation, and partnering considerations to prioritize solutions and formulate the capital projects that comprise their CIPP.

Rail

The Rail program uses three methods to identify capital needs and develop projects to fill them:

- For the Rail Passenger Program's capacity and speed improvements, a systematic approach, using simulation software and real-world expertise, has been used to develop a 20-year plan which identifies the major improvements required to meet various Amtrak Cascades service levels.
- For the Rail Passenger Program's safety improvements, projects are developed as federal funds become available through the TEA21 Section 1103(c) grant process. Each project is developed after review by the Federal Railroad Administration (FRA), **Federal Highway Administration (FHWA),** and Washington Utilities and Transportation Commission, and in partnership with local officials and railroad engineers' accounts of near incidents.

3 Appendix A contains a discussion and description of the information systems used to plan, monitor, control and report on WSDOT project and program delivery, including PATS.

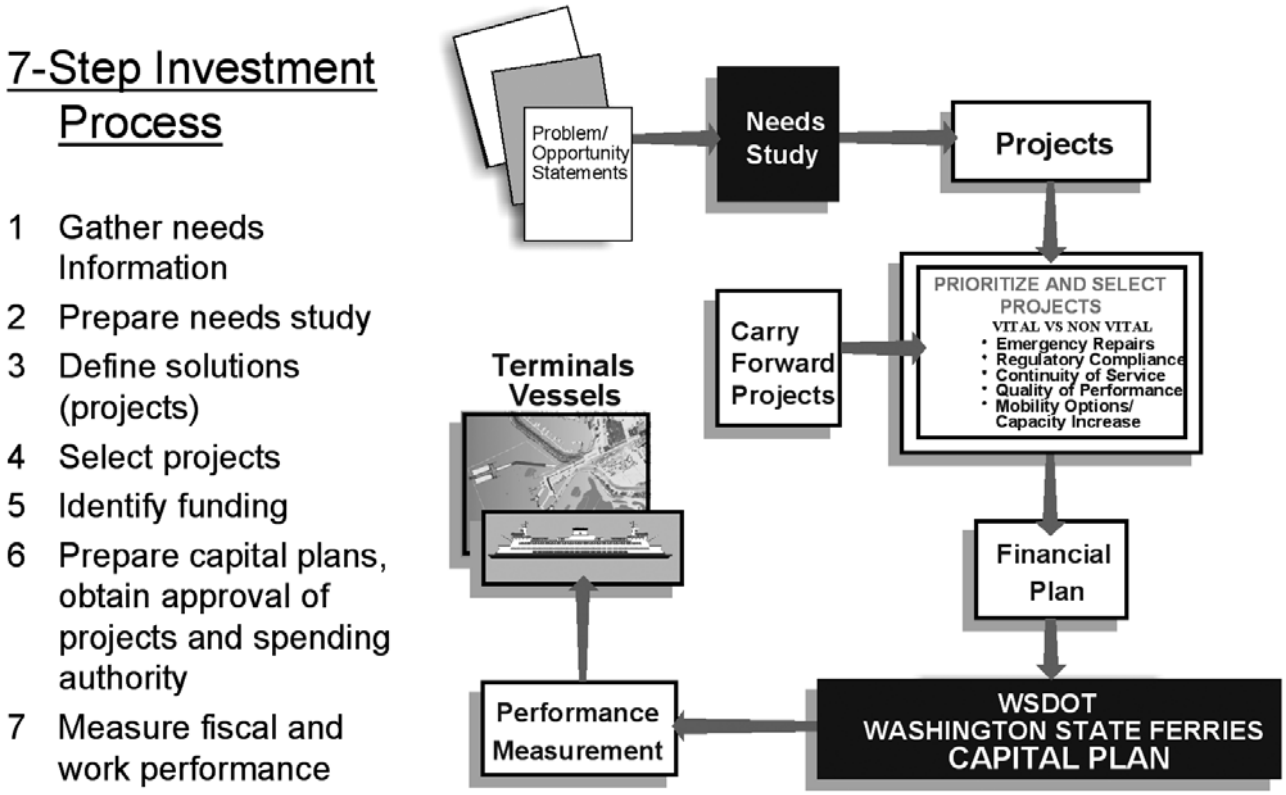

Figure 5. Washington State Ferries' 7-Step Investment Process

- The Freight Rail Program deals primarily with small private railroads, ports, cities, counties, and economic development agencies. Each year, the program makes a call for projects, which are scored on their respective economic benefits to the State and their potential avoided road damage. Projects are then weighed against the available appropriation and selected.

Aviation, and Public Transportation Programs

Aviation and Public Transportation program requirements are either defined by other agencies, or are not part of the Transportation Account process. For example, the state Aviation Division derives its requirements from the Federal Aviation Agency (FAA) and reports to the FAA on these requirements. Both the Aviation and the Public Transportation programs participate in transportation partnerships that do not flow through the state transportation programming process.

Programming and Budget Development

Prior to the beginning of the legislative session, the Strategic Planning and Programming Office (SP&P) submits a draft CIPP to the Washington State Transportation Commission for review. Upon Commission approval, the CIPP is transmitted to the Legislature for consideration in preparing and enacting the Transportation Budget.

Development of the draft CIPP begins when SP&P establishes estimates of the funding allocation targets for each program, sub-program, and category. Next, ongoing projects that will continue or "carry-forward" from the current biennium are included with the remainder of the allocations available for new work in the biennium. Building on this foundation, new projects are added based on Department policy, Washington State Transportation Commission direction, and the prioritized project lists. Project data is input into the Capital Program Management System (CPMS) and balanced to the target allocations for both dollars and workforce within each program for current and future biennia. CPMS is the Department's master scheduling and program management database. More information on the system can be found in Section 6. System plan deficiencies must also be entered in CPMS.

Prioritized projects are selected for each of the State-owned modes. The CIPP is balanced to create 10 year plans that are based on anticipated and projected revenues by fund source (as derived by the Budget Services Office).

The CIPP document also:

- Recommends investment levels by program and sub-program,
- Provides information about any revenue -shortfalls that exist, and

- Recommends how to allocate existing and -proposed revenues among the programs.

Fund Source Balancing

The identification and selection of fund sources to finance projects is an activity that is undertaken in parallel with the balancing of target allocations. Project and program funding can be drawn from a number of combinations of available state, federal, and local sources. Determining the most efficient mix of funds for a project or program is essential in order to gain the greatest return on the State's transportation investments. Funding sources often have attached to them specific requirements regarding how, when, and where they will be spent. Thus, it is important to thoroughly understand the statutory obligations associated with such monies. Program Managers enter funding information into CPMS.

Project Scoping

A Project Summary must be developed for each proposed project. The project summary identifies the need that has generated the project and the -recommended solution that will solve that need. Project Summaries document the project content and design decisions that were made in preparing project scopes. The environmental section of the Project Summary establishes the initial environmental classification and documentation required for the project. The Project Summary must be approved by the SP&P prior to beginning work on a project and is linked to CPMS.

Washington State Transportation Commission Action

As part of their review process, the Washington State Transportation Commission conducts work sessions with program managers to develop an understanding of what is included in each. The Commission also holds public hearings to gather additional input on the proposed budgets. The Commission considers the array of information, and then makes a final decision on what to include in the Department's budget proposal. The proposed budget is then sent to the **Office of Financial Management** for their review and action in advance of the legislative session.

Legislative Process

Once in session, the House Transportation and Senate Transportation Committees take up the proposed budget separately, holding public hearings and reviewing financial forecasts to confirm that sufficient revenue will be available to cover the budget proposal. Either committee has the authority to revise the amount of funds requested by the Commission for any of the programs; in addition, they will publish project lists that may include additional projects or exclude projects. Ultimately, both of the committees will send a proposed budget bill to the floor for their respective chamber's review and approval. A budget passed by either chamber requires approval of the other. Normally, a conference committee will recommend reconciliation of differences and submit a conference bill to be voted on. After the House and the Senate have approved a final budget, it is sent to the Governor for review. The Governor can sign it as is, veto certain items, or veto the entire bill and send it back to the Legislature for further action.

Program Implementation

Upon final passage of the Transportation Budget, final allocations for Nickel projects, as well as each program and sub-program are established for the biennium. SP&P works with the Budget Services Office to distribute and communicate the legislative authorizations and allocations to the regions and modes in order that they may make final adjustments to the CIPP data.

Once the project data has been corrected and verified, the final list of approved projects for the biennium is published after quarter one of the new biennium. PC&R uses this list to establish a baseline for schedules and costs. PC&R then uses the baseline to monitor and measure project and program delivery. The quarter one update is sent to the Washington State Transportation Commission for review and final approval. Approved capital projects are loaded into Legislature's computer tracking system, the Transportation Executive Information System (TEIS), which allow the Legislature to monitor and track activities that receive funds from the Transportation Budget.

Section 3. Overview of WSDOT Project Delivery

In order to understand how WSDOT monitors, controls, and reports project and program performance, it is helpful to understand the overall context in which projects are developed and delivered.

Overviewed in this section are the following aspects of project delivery:

- Roles and responsibilities among WSDOT units;
- Major milestones in the project delivery cycle; and
- The subset of milestones against which the Department tracks, monitors, and reports - performance.

Responsibility for Project Delivery at WSDOT

Prior to the beginning of the legislative budget session, SP&P leads the development of the highway construction section of the Capital Improvement and Preservation Program (CIPP). As managers of the ongoing construction program, PC&R provides coordination and support to the WSDOT Systems Analysis and Program Development Office in the program building process. PC&R provides input on project schedule expenditure data for work in progress. It also participates in the program development process to gain insight and understanding into programming objectives and decision making that lead to the new CIPP. PC&R positions itself to better manage the program by understanding how the program was built and to provide analysis and input into the new program to help ensure its deliverability.

After the Legislature has completed its work and appropriated transportation funding, PC&R produces a CPMS-compatible version of the CIPP that represents the project list approved by the Legislature. PC&R uses this version to make program management decisions from the time of its approval through the first quarter of the new biennium.

At the end of quarter one, PC&R will work with the regions to compile a revised program list that takes into consideration final accounting for the prior biennium. PC&R, in cooperation with the WSDOT Systems Analysis and Program Development Office, will produce a project reconciliation list comparing the final legislative project list with the quarter one list. This quarter one version of the CIPP (formerly called the Operating Book) describes most accurately what the Department will accomplish in the biennium and establishes a baseline to use for measuring program delivery. The process that WSDOT Systems Analysis and Program Development Office undertakes to the quarter one update completes the -development of the highway construction program.

The Role of Headquarters in Project Delivery

1. Working with the Legislature to coordinate planning and development of overall programs and projects;
2. Developing policy and standards to guide - development of projects;
3. Providing specialized technical expertise across the range of engineering, environmental, and legal disciplines required for design and construction of complex transportation facilities and services; and,
4. Overseeing and controlling established programs and budgets.

While Headquarters is responsible for these overarching functions, the regions and modes generally execute WSDOT projects through their design and construction activities.

Two separate entities at WSDOT Headquarters are responsible for the first and fourth functions—that is, working with the Legislature to first plan and develop the WSDOT program or portfolio of projects, and then to control that program once it has been set into place as a biennial budget.

SP&P, which reports through the Secretary's Chief of Staff, is responsible for the first function, while PC&R, which reports through the Assistant Secretary for Engineering and Regional Operations, is responsible for the second. While SP&P is responsible for building and planning the WSDOT program for the next biennium, PC&R is responsible for management and control of the current biennium. Following are functions carried out by the SP&P and PC&R, respectively.

Strategic Planning and Programming

- Focus on building and managing program for future biennia,
- Establish program and subprogram funding -levels,
- Target region and modal funding levels for -subcategory improvements and types,
- Establish priorities by providing ranked -deficiency lists
- Issue programming instructions to regions and modes,
- Assemble and balance final program by fund type and subcategory,
- Verify program accuracy and confirm priority order, an
- Provide Transportation Commission and Legislature with options and alternatives for -funding choices and levels.

Project Control & Reporting

- Focus on monitoring, controlling, and reporting on current biennium's programs and projects to ensure program and project delivery;
- Establish, manage, and execute procedures for authorization of work order expenditures and -federal aid project authorization;
- Coordinate and participate in quarterly meetings by the Executive Review Board to the regions and modes to review project and program performance and provide early senior management direction to address problems as they develop;
- Generate reports to analyze the delivery of the programs and projects;
- Establish and manage project control procedures, including establishment of approval levels for project changes;
- Compile and report on project and program -delivery performance for all modes and regions to the Legislature and to other external stakeholders on a quarterly cycle through the Gray Notebook ("Beige Pages" and "White Pages"), Summary of Adjustments to Project Delivery, Project Status Report ("Gantt Charts"), and web-based information through the QPRs and the project web pages;
- Prepare information for senior management and the Transportation Commission relating to project changes that require Legislative approval; and
- Document WSDOT project control and reporting policies and procedures.

The Role of the Regions and the Modes in Project Delivery

While WSDOT Headquarters takes the lead in formulating the program and in setting the parameters within which projects take place, projects are designed and built within the regions and among the modes. For this reason, it is helpful to understand the basic organizational structure of project delivery at regional and modal levels.

Role of the Project Engineer

Project Engineers serve as the basic point of responsibility for project management at WSDOT. Typically, each project is assigned to a project engineer, who leads the project team, which may comprise of WSDOT staff or consultants. Depending on the type of project, just a few disciplines (such as design, right of way, and construction) may be involved. On others, specialties such as geotechnical and bridge design may be required. On the very largest projects, such as projects within urban corridors, project engineers may report to Engineering Managers, Chief Engineers, and/or Project Directors. The WSDOT management teams may also be integrated with consultant staff.

The Project Engineer is generally responsible for development of the project management plan, the guiding document that sets forth the project scope, schedule, cost, and resource needs. WSDOT has a process called "Managing Project Delivery" that includes all the elements of a typical project management plan. Project management plans also often include communications and risk management plans. The project management plan is usually developed as part of an initial chartering session led by the project engineer.

It is the Project Engineer's responsibility to ensure that the project management plan includes all the work required, and may assign work breakdown structure elements to functional staff within WSDOT or to consultants, depending on resource availability. The Project Engineer coordinates work performance throughout the project life cycle, monitors project performance, and takes corrective action where necessary to adhere to the scope, schedule, and budget and reports the status of the project to management and provides project information for departmental reports. In addition, the Project Engineer is the chief point of contact and spokesperson for the project, both within the Department and to external stakeholders.

Project Engineers generally report on the project or projects for which they are responsible at the Quarterly Review Meetings. The Project Engineer serves as the single point of contact on matters involving overall project scope, cost, or schedule. He or she is responsible for controlling change to the project scope, budget, or schedule and for initiating approval for change from the original plan. The accountability expected from Project Engineers at WSDOT is reflected in the fact that their names and contact

information are listed on each WSDOT online project page, which is available to the public.

Project Engineers generally report to each region or mode's Project Development Engineer (or equivalent), who in turn generally reports to a modal or regional administrator. In the Rail Mode, the Project Engineer and the Regional Program Development Engineer is the same person, the Rail Projects Engineer.

Role of the Regional Project Development Engineer

As noted, WSDOT Project Engineers generally report to the region or mode's Project Development Engineer (or equivalent), who is responsible for delivering the portfolio of design projects within the region or mode. His or her duties focus on promoting the professional development of Project Engineers, including training, and establishing project management processes and procedures. In addition, Project Development Engineers work with project engineers to identify issues that will impact project scope, schedule, and budget and advise them in applying corrective action to minimize or mitigate their effects.

Role of Regional Project Directors

Due to their complexity, corridor projects are likely to have more complex management structures. Project Engineers may report to a Project Director who oversees engineering, environmental, and public relations efforts on the corridor, to make sure these high visibility projects meet public expectations for on-time, on-budget delivery of design projects within the region or mode.

Role of the Regional Construction Engineer

Similar to the Regional Project Development Engineer, the Construction Engineer is a direct report to the Regional Administrators. This position is responsible for administering the region highway construction program. These activities include assigning project engineers with appropriate supporting personnel while providing training and guidance to the project engineers. It is also the responsibility of the Regional Construction Engineer to ensure that sufficient personnel are provided on all projects at all times to ensure adequate inspection, documentation, and quality controls.

Role of the Regional Program Manager

While each region or mode generally has a Project Development Engineer or the functional equivalent, each also has a Program Manager. Regional and modal Program Managers establish regional priorities and work to ensure the most efficient use of available funding provided to the program or mode by the Legislature.

Legislative appropriations are at the program level (except for Nickel Projects), with additional restrictions by project or project type. At the region level, this activity requires Headquarters coordination due to Headquarters managed programs and statewide priorities. Line item programs cannot be adjusted at the region level. Certain programs or subcategories may allow for allocation of funds to the regions. However, as line item project lists increase, there are fewer funds available for "allocation." As projects are scheduled for design and construction, program managers in the regions/modes and at Headquarters approve funding, monitor progress, and report results. When necessary, program managers in the regions/modes adjust the construction program within their region or mode to maintain expenditures within available allocations.

Role of the Regional Administrator

The Regional or Modal Administrator bears the ultimate responsibility for project delivery at the regional or modal level. Regional Administrators report through the Assistant Secretary for Engineering and Regional Operations. The Chief Executive Officer of WSF reports directly to the Secretary of Transportation. The Director, Public Transportation and Rail Division represents the Rail mode and answers to the Chief of Staff.

Major Milestones in the Project Delivery Life Cycle

Although WSDOT is responsible for delivering hundreds of projects throughout the state that serve pedestrians, cars, buses, trucks, ferries, trains, and aircraft (as well as buildings that support these transportation modes), the major milestones in project delivery are quite similar. Although sequence and duration will vary depending on the complexity of the project (i.e., a simple paving project or complex corridor project), all projects must be designed, environmental permitting is almost always required, right of way issues must generally be resolved, construction bids must be solicited, and the facility must be built and ultimately opened to service.

During their development and construction, complex WSDOT projects may be organized around dozens of milestones. Historically, the most reported and familiar milestone has been the project's advertising date since this date generally signifies the end of design efforts and the transition to the project's construction phase. But this is only one of several milestones the Department uses to monitor its performance in project delivery. The 11 milestones listed below are common to most WSDOT projects; they provide a useful overview of the project delivery process.

Milestone 1. Project Definition Complete

Project definition entails determining the function, limits, and boundaries of the project at hand, providing enough information so that a preliminary cost estimate can be established.

Milestone 2. Begin Preliminary Engineering

A project schedule is usually broken into two general phases, the preconstruction phase and the construction phase. Preconstruction involves design, right of way, and environmental activities. Beginning the preliminary engineering marks the start of the project design and is usually the first activity in delivering the project.

Milestone 3. Environmental Documentation Complete

Most projects involve environmental processes requiring documentation prior to advertisement. These activities occur parallel to and are coordinated with the design process. This milestone is a good indicator of whether decision makers from other agencies will have the necessary information in hand and in time to make a decision on permits to keep the project on schedule.

Milestone 4. Right of Way Certification

Often WSDOT projects require purchasing right of way. The Right of Way Certification marks the point in time that several right of way requirements are met and the process is complete for advertisement.

Milestone 5. Advertisement (Ad Date)

This is the date that WSDOT schedules to publicly advertise a project for bids from pre-qualified contractors. When a project is advertised, it has a completed set of plans, specifications, along with an estimate prepared by the Department of what the work should cost. At this point, the Department will have obtained all necessary permits, right of way, and funding. During the advertisement period, prospective contractors review the bidding documents very closely in order to prepare their bid. This intense scrutiny may identify errors, omissions, or ambiguities in the plan and specifications. When these occur, the Department will issue an addendum to the plans and specifications to make corrections or clarifications so that they will be included in the competitive bidding process.

Milestone 6. Bid Opening

This is the date when the competitive bids for a project are received and publicly read. Typically advertisement periods range from 6 to 8 weeks, depending on the size and complexity of the project. If addenda are necessary for the contract late in the advertisement phase, the bid opening may be delayed in order to give potential bidders adequate time to incorporate the changes into their bid.

Milestone 7. Award

This is the date when the contract is awarded to the lowest responsible bidder. The Department typically can award the contract within one week after the bid opening, but has up to 45 days for review before awarding the contract. Once the contract is awarded, the contractor has an additional 20 days to obtain the insurance policies, bonds, and return the signed contract.

Milestone 8. Execution

This is the date when the Department signs the actual contract with the contractor. This typically occurs within 21 days following contract award.

Milestone 9. Construction Start

This is the date when work actually starts on building the project and activity might be seen on the site. Each contract specifies the number of working days the contractor has to complete the work. The working day clock starts on the tenth calendar day after execution by the Department. Work beginning on the site will depend on the weather and the nature of the work that needs to be performed.

Milestone 10. Operationally Complete

This is the date when the intended end user (the public in the case of facilities such as highway and ferry terminals, WSDOT employees in the case of facilities) has free and unobstructed use of the facility. In some cases, the facility will be open, but minor work items may remain to be completed.

Milestone 11. Final Contract Completion

This is the date when the contract is finalized. All contractual work will have been completed and all payments to contractors will have been completed.

Although WSDOT may track dozens of milestones for internal project management purposes, a subset of these milestones is tracked and managed against. That is, a subset of these milestones forms the structure of WSDOT's external reporting.

Milestones Tracked for WSDOT Control and Reporting Purposes

WSDOT is committed to meeting all milestones as a matter of good management and routinely reports the number of planned advertisement dates versus the number of projects actually advertised. However, a missed preconstruction milestone such as the advertisement date may not impact the actual start of construction work in the field or the open to traffic date. Often the advertisement is scheduled around available work force and periods of favorable bids that can occur virtually any time during the year.

Whereas the construction start is usually scheduled during a construction season around favorable weather and environmental conditions, usually spring through fall. As a result, some projects are scheduled for advertisement in late fall and during the winter with construction work planned to start in late spring or summer. For these projects, if the advertisement date were delayed, actual construction start and open to traffic milestones may not be impacted.

When evaluating delivery of the program, it is important to note that in some instances the planned advertisement date may be missed, but subsequent milestones may remain unchanged or time may be recovered such that the project completion remains on schedule, and WSDOT project delivery commitment is maintained. When reporting projects that slip past the planned advertisement date, WSDOT will also indicate if the project has slipped a subsequent milestone, such as the planned construction season or open-to-use milestone.

Although project schedules may change through the biennium, WSDOT uses the originally programmed milestones as the baseline for subsequent project tracking and reporting. The following are the milestones against which WSDOT tracks and reports on every Nickel project on a quarterly basis:

1. Project Definition Complete
2. Begin Preliminary Engineering
3. Environmental (Prior to Ad)
4. Right of Way Certification
5. Advertisement Date
6. Operationally Complete

(See Appendix D for milestone definitions)

Introduction

Once the final transportation budget has been passed by the Legislature, final allocations for each subprogram within the capital program are made and the final program of projects for the biennium is established in the CIPP. (See Section 2 for more details on how the capital program is developed.) WSDOT's objective is then to deliver the final program of projects within the established allocations. This requires careful funds management and control of project changes. Specific objectives include the following:

- Providing a means of controlling project - expenditures so that they stay within established scope, schedule, and budgets;
- Ensuring that all charges to funds are authorized, accurate, and appropriate;
- Optimizing the use and availability of federal funding by adhering to all requirements and -taking full advantage of all federal funding -opportunities;
- Being able to predict cash flow supply and demand in order to time the issuance of debt and retain high bond ratings, which reduces the cost of capital; and
- Maintaining sufficient cash reserves to cover emergency needs.

To accomplish this, WSDOT uses two related tools for the management of project expenditures and the management of project changes. The first is the Work Order Authorization process, and the second is the Project Change Management process, each of which is discussed in this section.

The Work Order Authorization process [see Appendix B] allows WSDOT to establish specific permission for a project to incur expenditures by funding type, amount, purpose, phase, and timing. This is accomplished through Headquarters approval of all new spending proposals. It provides control at the project level, as well as a mechanism for rolling expenditures up so that they can be managed at program and subprogram levels. This is important because it allows WSDOT to not only oversee project-level changes, but their individual and cumulative impacts at the program level.

While the work order authorization makes it possible administratively for expenditures to be charged against a given fund source, it does not constitute approval of any proposed change to project scope, schedule, or budget. The second tool, the Project Control Form process, must be used in order to gain approval for proposed project changes, including modifications in work order authorization. While the thresholds requiring a Project Control Form vary according to project type (i.e., significant changes to Nickel projects require Commission or Legislative approval), the Project Control Form constitutes WSDOT's sole change approval mechanism [see Appendix C].

Together, Work Order Authorization and the Project Control Form processes give WSDOT the ability to set the initial parameters for expenditures and to control changes at the project level once those parameters are in place. This allows WSDOT to manage the capital program at both the program and project level.

Managing Funds

Managing Funds at the Program Level

Role of the Regional and Modal Program Manager

The program manager for the region or other mode monitors funding within their administrative unit to ensure that planned expenditures do not exceed the allocation. Using a computer database, costs and expenditure schedules are regularly reviewed and updated. Cost trends within a program are identified and strategies developed to accommodate the changes. When unexpected needs arise, emergent projects are fitted into the overall financial plan. Partnerships are developed with local agencies and private parties to contribute to the cost of improvements to the state transportation system.

Role of the Headquarters Program Manager

Within Headquarters, the program manager looks at funding on a statewide basis to balance the planned expenditures against the available funds. State and federal funds have a limited supply and need to be managed closely. **Funds from local agencies are also appropriated in the budget or approved through the unanticipated receipt process. Unanticipated receipts are processed through the HQ Project Control & Reporting Office.**

The appropriation levels for state and federal funds, however, cannot be adjusted at will. Only those state funds from the Legislature are available to spend. Federal funds come from FHWA with spending limitations. Sometimes federal funds are raised or lowered by FHWA, apart from the Legislature's action, and revised federal appropriation levels are processed through OFM. One of the Headquarters program manager's tasks is to ensure that spending within a biennium does not exceed the available expenditure authority.

The Highway Construction Program is separated into the Improvement and Preservation programs, each of which is divided into subprograms. Headquarters oversight looks first at the funds balances within each subprogram to monitor if the planned expenditures match the available funding. The amounts of funding come from the legislatively approved project lists, being used to compute regional allocations by subprogram and fund type. The subprogram balances are also rolled up at the program level to check for the combined surpluses and deficits to avoid having the biennial expenditures exceed the available -expenditure authority.

The primary controlling mechanism used by Headquarters is the work order. Funds are not to be spent by the regions until authorized by Headquarters. This process allows regulation of the rate of expenditures within a biennium.

Headquarters also reviews the balance of planned expenditures and available revenue on a monthly basis. This indicates where spending should be accelerated or slowed down. Funding balances are summarized at the subprogram level by region, at the statewide level by subprogram, and at the program level for the -Improvement and Preservation programs.

Managing Funds at the Project Level

Projects are managed to deliver them on time, on budget, and within the appropriate scope. The program manager for the region or other mode is kept updated on progress. The project engineer or project manager identifies and reports project changes to the program manager for direction on how to best proceed. When project changes are required, the project engineer or project manager prepares documentation to support work orders for approval.

Role of the Regional and Modal Program Managers

Cost, schedule, and scope of each project is monitored to ensure that it is developed within the legislative intent. When cost thresholds are exceeded, the program manager for the region or other mode works with the project engineer or project manager to provide information to report and process the cost change. For smaller cost changes, a recommendation is prepared for approval within the administrative unit. On larger cost changes, a request for approval is prepared and submitted for review by upper management or at the organization-wide level. The program manager coordinates with local, state, and federal offices to obtain funding for individual projects. Work orders are prepared for initial project authorizations, cost changes, unprogrammed projects, and deleted work.

Role of the Headquarters Program Manager

Headquarters program managers routinely look at costs on a project level each time a new work order is processed for approval. Increases or decreases from the legislatively approved costs are approved at different levels based on the magnitude of the change. Low-level changes are within the regions' jurisdictions and require no Headquarters approval. Beyond a fixed minimal level, the program manager must review and approve cost changes. At the next highest level, the Assistant Director of PC&R reviews and approves changes. Changes beyond that level require approval by the Assistant Secretary. Nickel-funded projects or others that are politically sensitive are submitted to either the Transportation Commission or the Legislature for approval depending on the magnitude of the change.

Project Funds Authorization

Work Order Authorization Process

Expenditures can begin on individual projects within the highway construction program once project funds are authorized. The authorization of funding is documented through the Work Order Authorization (WOA) process [see Appendix B]. A separate work order is required for each project phase: preliminary engineering (PE), right-of-way (RW), and construction (CN). (Work may also be authorized for separate stages within a phase.)
A standard WOA form is used to submit the initial request for authorization, to make modifications, and to close the work order (Figure 6). This form is an important tool for managing project funds. Special care needs to be taken to make sure the form is submitted in a timely manner, is completed accurately, and provides clear information.
Once the new work order is established and project funds are authorized, work begins and charges come in against the work order. As expenditures are incurred, they are posted in the Transportation Reporting and Accounting Information System (TRAINS4) against an appropriation code. A nightly process translates the expenditures by appropriation code into expenditures by finance code in the Capital Program Management System (CPMS). The finance code is used in CPMS to track work order expenditures by fund source, to determine remaining authorization, to establish the monthly aging plan for the remaining authorization, and to redistribute planned expenditures over the remaining months of the project during the monthly aging process.

Regions track project expenditures, adjust monthly expenditure plans, and submit work order modifications as necessary. This monitoring of project expenditures is very important; it is much like balancing a checkbook. By law, the Department cannot spend more than its biennial appropriation for each program. Headquarters PC&R continually monitors and summarizes project level expenditures to make sure expenditures at the subprogram level remain balanced.

Approvals Required for Work Order Authorization

Highway Construction Program Approvals

Charted in Table 1 are the approval levels required for work order authorization within the highway construction program. Prior to arriving at the approval levels indicated in the table, a sequence of other, lower level approvals may also be required, which may differ by mode and region. Routing for work order authorization approvals varies

4Section 6 contains a discussion and description of the information systems used to plan, monitor, control and report on WSDOT project and program delivery, including TRAINS and CPMS.

according to each region and mode's organizational structure.

The WOA process allows expenditures for PE, RW acquisition, and CN of all projects within the CIPP [see Appendix B]. A WOA is used for:

- Setting up initial project phase funding.
- Increasing or decreasing project phase funding.
- Setting up funding for payable or reimbursable agreements on project phases.
- Transferring funds within a work order.
- Correcting inconsistencies between data systems (e.g., synchronizing work order setups).
- Adding funds from other program to highway construction projects (e.g., adding maintenance funds from Program M).
- Exchanging funds (e.g., a project receives local or developer funds after the phase starts; the funds from this new source can be added and funds from another source can be reduced accordingly).

The process of setting up a work order involves several computer systems. They include: the Capital Program Management System (CPMS), the Transportation Reporting and Accounting Information System (TRAINS), and the Contract Administration and Payment System (CAPS). TRAINS is the core system used for storing and managing expenditures and maintains the legal record of work order transactions. CPMS and CAPS are also used to manage and track work order data. CAPS data is fed to TRAINS for payments made to contractors. TRAINS -expenditure data is sent to CPMS every night.

Work order authorization and expenditures are tracked using a variety of reports, both printed and online, mainframe, and web-based. Work orders are generally reviewed on a monthly basis by work order managers but may be tracked more frequently if the situation warrants. Reports are available from TRAINS, CPMS, and FIRS to use for tracking expenditures. Most data can also be downloaded to a personal computer for use in producing customized reports, charts, and graphs.

Washington State Department of Transportation

Award Date:
PS&E:

Approve - FinalE_E

Work Order Authorization

Work Order: MS4904 **Manager:** COFFMAN, H. **Org. Code:** 304040 **WOA Date:** 8/26/2004 **Ad Date:**
WIN: H10163D **Work Order Title:** BRIDGE PRESERVATION INSPECTION 03-05
Type: Transfer **Work Description:** INSPECT CONDITION OF HIGHWAY BRIDGES AND STRUCTURES 03-05

Phase: ☑ PE ☐ RW ☐ CN **Source of Funds:** ☐ State ☑ Federal ☐ Local ☐ TIB ☐ ER **WOA Type:** ☐ Perpetual ☑ Biennial ☐ CCFA ☐ NonIP Perpetual ☐ NonIP Biennial ☐ NonIP CCFA

Reimbursable From:
Receivable Agmt No. **% / AMT** **Date Executed**

FOR FA PROJECTS ONLY

FA Number	Finance Code	FA %	FA Approp	FHWA Send Date	FHWA Auth Date
BRX-NBIS(054)	JT	80.00	Q100	6/30/2003	7/1/2003

☐ Programmatic Match ☑ Soft Match Toll Credits

RW Cert Approved: ☐ Yes ☑ N/A **STIP:** 099961D- Bridge Bucket.

Design Approved: **NEPA:**

Engineer Estimate Date	
Previous Authorization:	7,443,453.00
Group Category:	
01. Work Done Contractor:	
02. Work Done Others:	
Payable Agmt #: Y8489AB	37,404.00
03. Engineering:	
04. State Force Work:	-37,404.00
05. Material Furnished:	
06. Contingencies:	
07. R/W Acquisition:	
08. R/W Other:	
99. Vendor Supplied Materials & Services:	
Net Change:	0.00
New Total Authorization:	7,443,453.00

The CE/PE costs equal % of current est. construction

PIN	Sub Pgm	Sub Cat	Fund Acct	Legis Approp	Finance Codes	Auth Status	Amount Change	Control Section	Distr % by Cont Sect
099961D	P2	PB	108	A10	JT	Y	0.00	*****	100.00
099961D	P2	PB	108	A10	AA	Y	0.00	*****	

Counties: **State Route:** **MP From:** 0.00 **MP To:** 0.00

Net Change: 0.00 **Dist %:** 100.00

Work Order Justification

Transferring authorization from state force work to work done by others to set up agreement Y8489 AB with Echelon Engineering Inc for UW Inspections of 8 state bridge.

Notes to Accounting

Please set up the next available group for agreement Y8489 AB – Echelon Engineering Inc – $37,404.

Transfer authorization from group cat 04 to group cat 02. Thanks.

Notes to CPMS

Transfer.

Figure 6. Work Order Authorization Form (page 1 of 2)

Washington State Department of Transportation

Work Order Authorization (continued)

Work Order Number: MS4904

PIN	Sub Prog	Sub Cat	Approval Code	Status Code	Curr Plan This Bien	Curr Plan All Bien	Orig Plan This Bien	Orig Plan All Bien	Engineer Estimate
099961D	P2	PB	L	A	11,552,361.11	57,791,728.65	11,335,000.00	92,810,683.39	
								Engineer Estimate Total:	

Signature Information

Date	User	Role	Approve/Reject
8/26/2004 11:27:47 AM	Sanborn, Laura	StartE_EHQ	Approve
8/26/2004 11:38:08 AM	Sanborn, Laura	E_EHQInitiator	Approve
8/26/2004 1:32:37 PM	Jenkins, Lauren	FederalAid	Approve
8/31/2004 7:38:46 AM	Frick, Mitzi	PMAssistP2,P3	Approve
8/31/2004 8:34:42 AM	Frick, Mitzi	YLines	Approve
9/1/2004 7:22:42 AM	Runion, Bev	Trains	Approve
9/1/2004 12:53pm	Sanborn, Laura	FinalE_E	Approve

Attached Files

File Name

Figure 6. Work Order Authorization Form (page 2 of 2)

Table 1. Work Order Authorization Approval Levels

Type of Work Order	Approval by Headquarters	Approval by Region
Initial Set-up		
State funded work orders (PE only)		X[3]
Federal funded work orders (PE[2], RW[2] and CN[1])	X[1,2]	
Early RW appraisals ($20,000 limit)		X[3]
RW acquisition (all projects)	X[2]	
Region emergent needs projects (PE and CN only)		X[4]
All other CN work orders	X[1]	
Increase		
State funded work orders (PE only)		X4
Region emergent needs projects (PE and CN only)		X4
All other PE2, RW2 and CN1 work orders	X1,2	
Fund transfer (no change to current authorization level)		
State force labor (Group Cat 04) on CN work orders	X2	
All other transfers		X5
Reduction		
PE, RW, and CN work orders		X

1*The Assistant Director of Headquarters' Project Control & Reporting must authorize these expenditures after review by headquarters program managers.*

2*The HQ Program Manager (or designee) must authorize these expenditures.*

3*The Regional Administrator (or designee) can authorize these expenditures provided the authorization is at or less than what is in the approved program with a start in the current biennium, the Project Summary has been approved, and no federal dollars are involved.*

4*The Regional Administrator (or designee) can authorize these expenditures provided the authorization is at or less than what is in the approved program with a start in the current biennium and no federal funds are involved.*

5*The Regional Administrator (or designee) can authorize these expenditures provided no federal funds are involved, no transfer between fund codes, and no transfer between projects, and no new fund source is added.*

Federal Aid Project Authorization Process

If a project is proposed for federal funding, a Federal Aid Project Agreement (FAPA) is required in addition to a WOA [see Appendix B]. The FAPA documents the Federal Highway Administration (FHWA) commitment to participate in the project costs. The regions provide the information for submitting the agreement and Headquarters prepares and submits the final form to FHWA for approval. Usually, regions submit the WOA for funding authorization at the same time they submit information for the FAPA. The FAPA must be approved before work starts on a project phase that will use federal funds. The one exception is that a PE phase may be 100 percent state funded and underway before the FAPA is approved. Upon approval of the FAPA, federal funds may then be used for PE phase expenditures from the date of FAPA approval forward.

An FAPA, initiated by completing FHWA Form 120, defines the scope and cost of a project that will utilize federal funding (Figure 7). When approved by FHWA, the form documents FHWA's commitment to participate in the project cost. While this form is prepared and submitted by Headquarters, Region Program Management staff needs to understand the requirements for receiving federal aid funding on projects.

As stated earlier, the FAPA must be approved prior to starting any project phase planned for federal funding. Any expenditure incurred prior to FHWA approval are not eligible for reimbursement. An additional authorization may be required if there is a change in project scope, new work is added to the project, or contract conditions are renegotiated. This is particularly important during construction when new work or payment incentives may be added to the project by a change order.

Approval Process for Federal Aid Project Agreements

The Funds Authorization and Systems Support Branch of Headquarters PC&R, using information provided by a status report and/or a completed Work Order Authorization form, prepares the FHWA Form 120 [see Appendix B]. It is reviewed and approved in Headquarters, then submitted to FHWA for review and approval. The FHWA review considers such questions as:

- Are the requested funds available?
- Is the project as described eligible for the type of funds requested?
- Has the state met FHWA requirements for -developing the project?
- Is the project in the current approved Statewide Transportation Improvement Plan?

Once the review is completed, FHWA returns the approved form to PC&R in Headquarters. A WOA can then be processed, reviewed, and, if there are no other issues to be resolved, approved by PC&R. It is then forwarded to Headquarters Project Support Services for set up in TRAINS. A copy of the approved form can be accessed in the Federal Aid Tracking System (FATS). Figures 9 and 10 show the steps involved in -federal aid approval.

Project Change Control

Project controls are activities intended to ensure that project scope, schedule, budget, and quality objectives are achieved; where this is not feasible, project controls provide a consistent means of managing change. Project control activities encompass monitoring and measurement of progress against established baselines to anticipate and identify variances from plan; the system of approvals required for the authorization of change; detection of incorrect or unauthorized changes; and any corrective action taken to prevent or mitigate variances from established baselines. WSDOT's system of project controls is described in this section.

Change Drivers

As noted, project managers or project engineers are responsible for delivering their projects according to the established scope, schedule, and budget. However, adjustments to project schedules and budgets are sometimes required for reasons including, but not limited to, the following:

- Emergency needs;
- Changes in federal or state revenue levels;
- External actions that affect the Department's -ability to deliver projects, such as work force reductions;
- Changes in permitting or regulatory requirements;
- Previously unknown site conditions that could not have been anticipated in the absence of -prohibitively expensive scoping;
- Errors and omissions in the design process;
- Atypical fluctuations in the cost of materials; and
- Value-added increases in scope that are directed after the baseline have been established.

The Project Engineer's Responsibility for Project Control

The assigned Project Engineer is the person with primary responsibility for monitoring the specific activities of a work order and for ensuring that expenditures remain within authorized funding. The Project Engineer establishes a work plan that clearly tracks how much has been spent each month as well as planned expenditures on a monthly basis.

Washington State Department of Transportation
Modification of Federal Aid Project Agreement

Project Number: 0401(003) **Prefixes:** (AC) NH, ER, **Mod Number:** 5

Title: SR101-HOH RIVER - EMERGENCY REPAIRS - DMC071, MS5031,SF4066 & 006271.

Purpose: ☑ Authorizing Work ☑ Obligating Funds **Mod Justification:** ADDING ADDITIONAL FUNDS

Description: MODIFICATION NO. 5: THIS REQUEST (SF4066) PROVIDES FOR ROADSIDE RESTORATION / PLANT ESTABLISHMENT BY STATE FORCES $25,950.00.

The Project Agreement for the above referenced project entered into between the undersigned Parties and executed by the Division Administrator on Nov 14, 2003 is hereby modified as follows:

Description/Location: HOH RIVER - EMERGENCY REPAIRS
SR101-18.62 TO 18.72 MILES SOUTH OF JUNCTION SR110.

County	Urbanized Area	WIN	W/O #	Sub Pgm	PIN No	Structure	Fin Code
JEFFERSON	NOT IN AN URBANIZED AREA	C10141C	006817	P3	00CNM		JL
		C10141F	DMC071		00PC		
		C10141G	MS5031		310141C		
			SF4066				

SR: 101 **Beginning MP:** 174.100 **Ending MP:** 174.600 **Place Code:** NOT APPLICABLE

Design Apprvl: 04/15/2004 **Envirnl Clrnc Date:** 04/13/2004 **Envirnl Clrnc:** CATEGORICAL EXCLUSION: (DCE) FHWA DOC

ROW Certfn: 00/00/0000 **STIP Apprvl:** 00/00/0000 **STIP Ref:** EXEMPT

FEDERAL FUNDS: Class of Funds	Approp	Fin Cd	Prc-Rata	Phase	Current Amount	Previous Amount	Increase/Decrease
MERGENCY RELIEF - FED AID - OTHER	09V0	JL	100%	CN	504,270.00	504,270.00	.00
NATIONAL HIGHWAY SYSTEM	H050	JL	86.5%	CN	6,969,854.00	6,943,904.00	25,950.00
				Total Federal Funds:	**$7,474,124.00**	**$7,448,174.00**	**$25,950.00**
				Total Non-Federal Funds:	$2,250,213.00	$2,246,163.00	$4,050.00
				Total Project Funds:	**$9,724,337.00**	**$9,694,337.00**	**$30,000.00**

Incl Soft Match - TOLL: No
Incl Soft Match - IDC: No

NON-FEDERAL FUNDS: Fund Type	Approp	Fin Cd	Phase	Amount	Previous Amount	Increase/Decrease
STATE FUNDS			CN	2,250,213.00	2,246,163.00	4,050.00
			Total Non-Federal Funds:	**$2,250,213.00**	**$2,246,163.00**	**$4,050.00**

Figure 7. FHWA Form 120 (page 1 of 2)

Washington State Department of Transportation
Modification of Federal Aid Project Agreement

Project Number: 0401(003) **Prefixes:** (AC) NH, ER, **Mod Number:** 5

Title: SR101-HOH RIVER - EMERGENCY REPAIRS - DMC071, MS5031,SF4066 & 006271.

Purpose Of Request: MODIFICATION NO. 5: THIS REQUEST (SF4066) PROVIDES FOR ROADSIDE RESTORATION / PLANT ESTABLISHMENT BY STATE FORCES $25,950.00.

MODIFICATION NO. 4: CONVERT ADVANCED CONSTRUCTION FUNDS, $6,943,904.00 TO H050.

MODIFICATION NO. 3: INCREASE (A/C) NH H050 CN, $1,639,656.00 TO ADJUST TO AWARD.

MODIFICATION NO. 2: THIS MESSAGE SERVES AS MY AUTHORIZATION TO REMOVE ALL FHWA CONDITIONS (PLACED AT THE TIME OF CONSTRUCTION AUTHORIZATION) RELATED TO AD, BID OPENING, AND AWARD OF THE SUBJECT PROJECT, CONCERNING ESA CONSULTATION (COMPLETION OF THE BO) WITH THE USF&WS. FHWA HAS FORMALLY NOTIFIED THE USF&WS THAT THIS PROJECT WILL BE DESIGNATED AN EMERGENCY PROJECT UNDER ESA AND CONSULTATION WILL BE COMPLETED DURING OR AFTER CONSTRUCTION PER ESA REGULATORY PROCEDURES. FROM: HUGHES, GARY (FHWA) 6/14/2004

MODIFICATION NO. 1: THIS ADVANCE CONSTRUCTION REQUEST PROVIDES A PERMANENT REPAIR TO PREVENT FUTURE EROSION BY INSTALLING PILING AND CREATING IN RIVER LOG JAMS FOR BANK PROTECTION, RECONSTRUCTION AND RESURFACING THE SHOULDER ON THE RIVER SIDE OF SR101 DAMAGED BY HEAVY REPAIR EQUIPMENT AND TRAFFIC CONTROL DURING THE REPAIR WORK.

ORIGINAL CN REQUEST: THIS REQUEST PROVIDES TEMPORARY / INCIDENTAL PERMANENT REPAIR OF BANK EROSION ALONG THE HOH RIVER ADJACENT TO SR101 BY PLACING HEAVY LOOSE RIPRAP TO PREVENT FURTHER EROSION AND TO REPAIR DAMAGED BARBS IN THE RIVER.

PRELIMINARY ENGINEERING ACCOMPLISHED ON FEDERAL PROJECT ER-0401(031), XL1557.
SCHEDULED TO BE ADVERTISED ON 5/10/2004. NEPA DCE: APPROVED BY FHWA ON 4/13/2004.
NOAAF "EFH" APPROVED 3/16/04 AND USFWS WILL BE DETERMINED PRIOR TO BID OPENING.
RIGHT-OF-WAY WILL BE CERTIFIED PRIOR TO BID OPENING.
THIS PROJECT WILL BE A REGION AD AND AWARD (RAA).
THIS PROJECT WILL BE CONVERTED TO EMERGENCY RELIEF FUNDS WHEN THOSE FUNDS ARE AVAILABLE ! AUTHORIZATION TO PROCEED IS NOT A COMMITMENT OR OBLIGATION TO PROVIDE FEDERAL FUNDS FOR THAT PORTION OF THE UNDERTAKING NOT FULLY FUNDED HEREIN.

Remarks: MODIFICATION NO. 5: THIS REQUEST (SF4066) PROVIDES FOR ROADSIDE RESTORATION / PLANT ESTABLISHMENT BY STATE FORCES $25,950.00.
THIS MESSAGE SERVES AS MY AUTHORIZATION TO REMOVE ALL FHWA CONDITIONS (PLACED AT THE TIME OF CONSTRUCTION AUTHORIZATION) RELATED TO AD, BID OPENING AWARD OF THE SUBJECT PROJECT,
CONCERNING ESA CONSULTATION (COMPLETION OF THE BO) WITH THE USF&WS. FHWA HAS FORMALLY NOTIFIED THE USF&WS THAT THIS PROJECT WILL BE DESIGNATED AN EMERGENCY PROJECT UNDER ESA AND
CONSULTATION WILL BE COMPLETED DURING OR AFTER CONSTRUCTION PER ESA REGULATORY PROCEDURES.
HUGHES, GARY (FHWA) 6/14/2004

All other terms and conditions of the Project Agreement will remain in full force and effect.

This modification is effective as of Aug 30, 2004

The State stipulates that as a condition to payment of the Federal Funds obligated, it accepts and will comply with the provisions set forth in 23 CFR Part 630.307 and 49 CFR 26.13(a) which is incorporated herein by reference. The State further stipulates that its signature on the project agreement constitutes the making of the certifications set forth in 23 CFR 630.307 and 49 CFR 26.13(a).

WSDOT APPROVAL: By: JOHN R. JEFFREYS Date: 08/30/2004

FUNDS AVAILABLE: Initials: Date:

FHWA RECOMMENDED SIGNATURE: By: Date:

FHWA AUTHORIZED SIGNATURE: By: TONYA D. PRICE Date: 08/30/2004

Distribution:

- ☐ Region: OLYMPIC
- ☐ Program Manager
- ☐ Federal Aid Files
- ☐ Project Support Services
- ☐ Contract Ad and Award
- ☐ Records Control
- ☐ _____
- ☐ _____

9/2/2004
Page 2 of 2

Federal Aid Tracking System (FATS)
DIST, W/O, CPMS, FMIS, D/B, FATS

Created By: JENKINL

Figure 7. FHWA Form 120 (page 2 of 2)

The Project Change Process

While the Quarterly Review Meetings, the *Gray Notebook*, *Summary of Proposed Adjustments for Project Delivery*, and web pages are WSDOT's chief monitoring and reporting tools, the means by which the Department controls approval of proposed changes in scope, schedule, and budget is the Project Control Form (Figure 8). Although some minor changes are permissible through an amendment to an existing work order authorization, submission of a Project Control Form is required for most changes on Non-Nickel projects and for all Nickel Project changes that are proposed prior to or at contract award. After contract award, the construction change order process is used to approve project changes (Figures 9 and 10); however, the PCF is still used to elevate funding and schedule issues (such as threshold breaks) associated with approved construction project changes.

The Project Control Form

The Project Control Form provides detailed information about proposed schedule, cost, and programming changes in a standardized format. It is the key source document within WSDOT for documenting and approving project variances. A work order authorization to allow proposed -changes may not be approved until the Project Control Form (or change order for construction projects) is approved [see Appendix B].

All identifying information about the project for which a change is proposed, such as its Nickel List title, its LEAP List Title, its CIPP project title, must be indicated on the Project Control Form. The person requesting the change must also indicate where the project is located and the subprogram from which it is funded. The project's functional intent and what is currently approved must be summarized. The requester must then address four questions:

1. What has changed?
2. What caused this change? Any previous Beige Pages reports on the same project are to be referenced.
3. How will the change be accommodated?
4. What has the Department learned that can improve performance in the future?

Budget Changes

Any requested budget changes must be presented alongside the original budget by phase and by biennium. The total variance is summarized.

Schedule Changes

Proposed schedule changes must be specified by six key milestones with original scheduled milestone completion dates compared against the proposed revised dates, by biennium. These milestones are:

1. Project Definition Complete
2. Begin Preliminary Engineering
3. Environmental Documentation Submitted
4. Right of Way Certification
5. Advertisement Date
6. Operationally Complete

Proposed Program Adjustments

The person initiating the requested change must also indicate how the proposed adjustments at the project level are to be accommodated within the program. This is done by indicating the action the Department will take to accommodate the revisions to an existing project or an unprogrammed project.

Lessons Learned

The Project Control Form also includes a field in which to address any lessons learned that might provide similar positive outcomes or preclude similar negative outcomes on future projects.

Table 2 shows the thresholds for approving changes on non-Nickel projects. As indicated, WSDOT must report all changes to project scope, schedule, and budget for both Nickel and non-Nickel projects (with the exception of minor scope changes that do not alter the project's functional intent for non-Nickel projects). This table references the highway mode. While other modes have substantively similar processes, the details and routing requirements differ depending on the unique nature of the mode and the size of the organization

Table 2. Existing Revenue Projects (Non-Nickel) Internal WSDOT Approval Process

		Threshold	**HQ Approval** Level	**Project Control Form**
Cost	Minor	Changes up to $200K for projects < $2M Changes up to 10% for projects > $2M and < $10M Changes up to 1M for projects > $10M	HQ Approval not required	Informational
		Changes up to $400K for projects < $2M Changes up to 20% for projects > $2M and < $10M Changes up to $2M for projects > $10M	Improvement & Preservation Program Mgrs.	✓
		Changes above Headquarters PM Level, up to $3M	Asst. Dir. PC&R	✓
	Major	Changes above $3M	Asst. Secretary Eng. & Regional Operations	✓
Schedule	Minor	Advances or delays that can be accommodated by current biennial cash flows	Asst. Dir. PC&R	✓
		Advertisement date moves between calendar quarter	Improvement & Preservation Program Managers	
	Major	Advances or delays that can NOT be accommodated by current biennial cash flows	Director, PC&R Asst. Sec. Eng. & Reg. Operations	✓
		Advertisement date change causes the construction phase to slip to the next construction season		
		Advertisement date is deferred to a future biennium		
Scope	Minor	Changes to original planned improvements that do NOT alter the functional intent of the project as funded by the Legislature	Asst. Dir. PC&R	✓
	Major	Changes to original planned improvements that SIGNIFICANTLY alter the functional intent of the project as funded by the Legislature	Director, PC&R Asst. Sec. Eng. & Reg. Operations	✓
Program		Unprogrammed projects	Asst. Secretary Eng. & Regional Operations	✓
		Deleted projects		✓

HIGHWAY IMPROVEMENT AND PRESERVATION
PROJECT CONTROL FORM

Date Submitted: 10/7/04 **Approval Date:** 11/19/04

Proposed change affects Nickel scope/cost/schedule? Yes__ No X

Nickel List Title (if appropriate):
LEAP List Title: SR 66/SR 3 TO 76TH ST NW VIC
CIPP Project Title: SR 66/SR 3 TO 76TH ST NW VIC, MP 0.00 TO MP 5.9
Location: Lake Johns
Program Item No.: 106600H
Work Item No: A06600H
Legislative District: 48
Subprogram: I2
CPMS Change ID: 2004 275 008

Unprogrammed Project:		**Deleted Project:**		
Change Threshold:	**Major**	**Minor**		**No Change**
		ADir	**PMgr**	
Scope Revision[1]		X		
Cost Revision		X		
Schedule Revision			X	

1. Summary of Project Functional Intent:

- Briefly summarize the scope of the initial project to include the purpose of the project:
  This project will build left turn lanes on SR 66 at 99th Ave NW/Lake Teresa Road and 147th Ave NW. It will also build right turn lanes on 99th Ave/Lake Teresa Road, and upgrade safety features in the project area to address a high-risk traffic channelization deficiency.

- Summarize all prior changes that have been approved:
  Amended scope as approved by PCF on 6/9/03:
  - Realign the north leg of 147th Ave NW to the east to form a four legged intersection with SR 66
  - Lower the grade of the vertical curve on SR 66 east of the intersection to improve intersection sight distance

  Amended scope as approved by PCF on 11/4/03:
  - Construct an eastbound right turn pocket on SR 66

  Cost increase for $350,00 approved by PCF on 7/15/04:
  - Hydraulic redesign

2. Summary Description of Proposed Revision:

- Describe the proposed change (include change category or categories that apply):
  Change category: Environmental
  The PE phase cost needs to be increased by $50,000 and the CN phase cost needs to be increased by $450,000. This would be a $500,000 change since the last HQ approved changes and an accumulated change of $850,000 since 04LEGFIN, which breaks a new Minor approval threshold. The Operationally complete date will slip one month.

- Describe *why* this proposed change is necessary:
  The need for a noise analysis was missed during the design phase of the 147th Ave NW realignment. The resultant analysis indicates an existing noise wall needs to be extended 200 feet to protect two residential homes, which will result in a one-month delay in opening to traffic because the contractor will stage on 147th Ave.

- Include references to any previous reports or Quarterly Reviews that discussed this proposed change:
  This proposed change was discussed during the PC&R Assistant Director and Program Managers visit to the Region on 8/24/04.

[1] Note: For scope revisions, briefly summarize revision in Section 2 and attach additional sheet describing in detail the scope change.

Page 1 of 4

Figure 8. Project Control Form (Page 1 of 4)

Project Control Form
SR, Title

3. Summary of Schedule Revision Proposed (to show biennial accommodation):

Project Timeline	Project Milestones					
	Project Definition Complete	Preliminary Engineering (Start)	Environmental (Prior to Ad)	Right of Way Certification	Project Advertised	Operationally Complete
Baseline	06/21/00	08/02/99	06/15/04	07/05/04	10/25/04	03/20/06
Last HQ Approved	11/4/03	08/02/99	06/15/04	07/05/04	10/25/04	03/20/06
Proposed Change	None	None	None	None	None	04/12/06
Net Change in Months (Proposed vs. Baseline)	0	0	0	0	0	1

4. Summary of Budget Revision Proposed ($ in 1000s):

Nickel Funding:

Phase	Cost	Prior	03-05	05-07	07-09	09-11	11-13	Future	Total	Variance
	Baseline								0	
Prel. Engineering	Last HQ Approved								0	
	Proposed								**0**	**0**
	Baseline								0	
Right of Way	Last HQ Approved								0	
	Proposed								**0**	**0**
	Baseline								0	
Construction	Last HQ Approved								0	
	Proposed								**0**	**0**
	Baseline	0	0	0	0	0	0	0	0	
Total	Last HQ Approved	0	0	0	0	0	0	0	0	
	Proposed	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total Variance	**Proposed vs. Baseline**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
	Proposed vs. Last HQ Approved	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

Figure 8. Project Control Form (Page 2 of 4)

Project Control Form
SR, Title

Non-Nickel Funding:

Phase	Cost	Prior	03-05	05-07	07-09	09-11	11-13	Future	Total	Variance
	Baseline	250	200						450	
Prel. Engineering	Last HQ Approved	250	550						800	
	Proposed	**250**	**600**						**850**	**400**
	Baseline	260	210						470	
Right of Way	Last HQ Approved	260	210						470	
	Proposed	**260**	**210**						**470**	**0**
	Baseline	0	1,700	1,600					3,300	
Construction	Last HQ Approved	0	1,700	1,600					3,300	
	Proposed	**0**	**1,700**	**2,050**					**3,750**	**450**
	Baseline	510	2,110	1,600	0	0	0	0	4,220	
Total	Last HQ Approved	510	2,460	1,600	0	0	0	0	4,570	
	Proposed	**510**	**2,510**	**2,050**	**0**	**0**	**0**	**0**	**5,070**	**850**
Total Variance	**Proposed vs. Baseline**	**0**	**400**	**450**	**0**	**0**	**0**	**0**	**850**	
	Proposed vs. Last HQ Approved	**0**	**50**	**450**	**0**	**0**	**0**	**0**	**500**	

5. Proposed program adjustments to accommodate unprogrammed project or cost/scope/schedule revision:
(Include what action the Department needs to take to resolve, mitigate, implement, or accommodate the revision.)
Recommend the cost increases in 03-05 and 05-07 be accommodated from recent I2 program savings as a result of the deferral of the SR 95 safety project from 03-05 to the later half of 05-07. This added scope does not affect the planned construction start.

6. Address any lessons learned that might provide similar positive outcomes or preclude similar negative outcomes in future projects:

Lesson – *Describe what knowledge was gained from this experience.*
Noise analysis should be conducted for proposed ramp extensions or realignments due to the high probability of these types of structures being in close proximity to business and residential areas. In this case, an existing noise wall was already in place but it did not buffer two homes adjacent tot eh ramp realignment. This should have prompted the need for a noise analysis.

Recommendation – *Describe how the knowledge gained from the lesson can be used.*
Noise analysis consideration was added to the ramp design checklist.

Figure 8. Project Control Form (Page 3 of 4)

Project Control Form
SR, Title

7. Proposal Concurrence:

	Initials	Date
Initiator	BLT	10/7/04
Project Engineer / Manager	SAD	10/14/04
Region Project Development Engineer	DOE	10/19/04
Region Program Manager	SHE	10/22/04
Region Administrator	TOP	10/27/04
HQ ASDE	LIP	11/05/04
Other: _____	____	_____
Priority Manager	SLO	11/10/04
HQ Program Manager	HIP	11/17/04
Assistant Director Project Control and Reporting	DAB	11/19/04
Director Project Control and Reporting	____	_____

8. Concurrence Comments:
Concur with Region's recommendation to use savings from the deferral of the SR 95 safety project to fund this proposed change. HIP 11/17/04

9. Approving Authority's Response:

- ☐ Approved
- ☐ Approved with conditions (see Comments)
- ☐ Needs additional evaluation or information (see Comments)
- ☐ Not Approved

Authority: _____ **Date:** _____

Comments:

Figure 8. Project Control Form (Page 4 of 4)

Project Control Procedures: Nickel Projects vs. Non-Nickel Projects

There are differences between projects funded from the Nickel Account and those that are funded using preexisting revenues, both in terms of the change approval process for individual projects and in terms of how program level fluctuations resulting from project level changes are managed [see Appendix C].

A key difference between Nickel and Non-Nickel projects in terms of Project Control Form approvals is the level of approval required. In the highway and ferry modes, any change to Nickel projects must be either approved by the Transportation Commission or Legislature on a line-item basis. Meanwhile, for the rail mode, all changes to Nickel projects must be approved by the Legislature on a line-item basis, regardless of the magnitude of the proposed change. Major changes that require legislative approval are defined as those that:

- Cost changes that cannot be accommodated within current biennium cash flow;
- Delete an already programmed project;
- Add any project not already programmed;
- Permit schedule advances or delays that cannot be accommodated within the current biennial cash flow; and
- Entail major scope changes that significantly alter the project's functional intent.

Not only must the Legislature approve any major change to a Nickel project in the highway and ferry modes, the reallocation of any resources resulting from a cost under-run on a Nickel project must also be approved by the Legislature. All changes to Nickel projects below these thresholds require Transportation Commission approval. In contrast projects funded at the program level, as are almost all Non-Nickel projects, WSDOT may reallocate resources among projects managed at both a project and programmatic level.

Presentation of Projects for Legislative Consideration and Approval

Projects that require Legislative approval for any proposed change are presented in three subsections of the Beige Pages in the *Gray Notebook*: (1) the "*Watch List*," (2) "Proposed Program Adjustment to Delivery Planning," and (3) "Opportunities and Options for Legislative Consideration."

The Watch List

The *Watch List* contains projects that WSDOT has identified as posing risk that could trigger a project change. Within the *Watch List*, the nature of the risk is specified. The project is reported continuously in the *Watch List* until the risk is removed or a change actually occurs. In addition to keeping the Legislature and the public apprised of project risks, the *Watch List* also keeps project managers and the units of which they are part visibly in the forefront.

Opportunities and Options for Legislative Consideration

If a major change outside the Transportation Commission's approval authority occurs, the project is moved from the *Watch List* to the second section of the Beige Pages that serves as the forum for legislative consideration: that is, *Opportunities and Options for Legislative Consideration*. Because the Legislature is only in session for part of the year, action on any given option or opportunity must be held until the legislature reconvenes and decides upon a course of action. Legislative action is then reflected in the budget.

Adjustments to Delivery Planning

Changes that fall below the Legislative approval threshold are moved from the *Watch List* to the subsection of the Beige Pages titled *Adjustments to Delivery Planning*. Once approved by the Commission, the changes are incorporated into the construction program and formally reported to the Legislature with the publication of the *Gray Notebook*.

The Impact of Project-Level Changes: Program-Level Modifications

Program-level modifications may be required as the result of individual and cumulative changes at the project level. The program-level impacts of project-level changes include the following:

- Expenditure plans exceed the allocation (are overprogrammed),
- Expenditure plans fall below the allocation (are underprogrammed),
- Expenditure plans use less than 100 percent of the federal allocation,
- Workforce plans are out of balance with allocations,
- Fund source plans are unbalanced,
- Fund source appropriations are exceeded,
- Preliminary engineering or right of way phase actual expenditures are below planned expenditures,
- Actual expenditure rates compare unfavorably with historical rates, or
- Actual projects to ad do not match planned ads for the quarter.

All program-level modifications must be translated back and implemented at the project level. Adjustments may be made by modifying project cost, scope, schedule, or workforce size and composition. Program-level expenditures are monitored through reports generated by WSDOT's Capital Program Management System and other databases used to

monitor and manage federal, state, and local funds against projects to be delivered.[5]5

Program managers at the regions, modes and Headquarters conduct monthly and quarterly reviews to analyze the status of program funds and to determine what adjustments are needed to keep funds balanced with appropriations and financial plans. Decisions as to how to translate program level changes back to the project level are generally made through collaboration between PC&R and regional and modal administrators.

5 Section 6 contains a discussion and description of the information systems used to plan, monitor, control and report on WSDOT project and program delivery, including CPMS.

Section 5. Project and Program Reporting

WSDOT reports on its activities and project delivery performance to the Legislature, the Transportation Commission, and other stakeholders through its system of quarterly reviews and reporting, which are described in this section. WSDOT program delivery is managed at the individual project-level. Each project is managed to maintain cost, scope, and schedule as budgeted. The delivery process is designed to catch problems and changed conditions early with senior management involvement in solutions and open disclosure of any changes that could result. It is the Department's policy to deviate from the budget only when conditions require it or there is a direct benefit to the State to do so.

A critical aspect of project control is continuous monitoring, tracking, and reporting of both project performance and program status, which facilitates the early identification of baseline variances. Project and program monitoring, tracking, and reporting occur at multiple levels within the Department.

Individual project engineers and their consultants use a range of project management programs, such as Project Development Information System (PDIS) and Microsoft Project day to day to track their project and budget performance relative to work accomplished, usually in conjunction with WSDOT's information resources. Both PC&R and regional program management offices use the Capital Program Management System (CPMS) to monitor each program. The WSDOT regional offices also maintain detailed project tracking and program monitoring databases and reports for internal performance monitoring. Meanwhile, PC&R maintains its own independent check on the status of all WSDOT projects and programs—both individually and at the statewide level—through a series of tracking and reporting activities, which are conducted on monthly and a quarterly cycles.

PC&R has established a standardized reporting system that dovetails with the Department's project controls procedures. PC&R works with the regions and the modes to compile, refine, and prepare for -presentation, summary project and program delivery reports. These reports are at levels of detail and aggregation useful to the Transportation Commission, the Legislature, and the general public each quarter and on an ad hoc basis as needed.

Schematic diagrams of the WSDOT review and reporting process in relationship to the Project control processes are illustrated in Figures 9 and 10.

Reviews

WSDOT's performance measure and accountability process is comprised of two phases: reviews and reports.

Besides routine oversight of highway and modal projects and programs by the Headquarters program managers, WSDOT performs quarterly reviews of the status of all capital programs, Nickel projects, and any regionally significance projects on two levels, a mid-quarter review of highway programs and projects by Headquarters program managers with regional program managers and a formal Quarterly Project Review Meeting by the WSDOT Executive Review Board with regional and modal management staff at the end of each quarter.

WSDOT's Executive Review Board

The Executive Review Board is comprised of WSDOT senior management with the primary purpose of providing direct senior management oversight program and project delivery. The Board reviews and/or approves all major program and project changes, depending on whether the changes occur on Nickel or non-Nickel projects, and provides direction in developing strategies to address problems as they develop.
The Executive Review Board is comprised of the following members:

- The Assistant Secretary for Engineering and Regional Operations,
- The Secretary's Chief of Staff,
- Modal Directors,
- The Director of Environmental & Engineering Programs, and
- Director of Project Control & Reporting (PC&R)

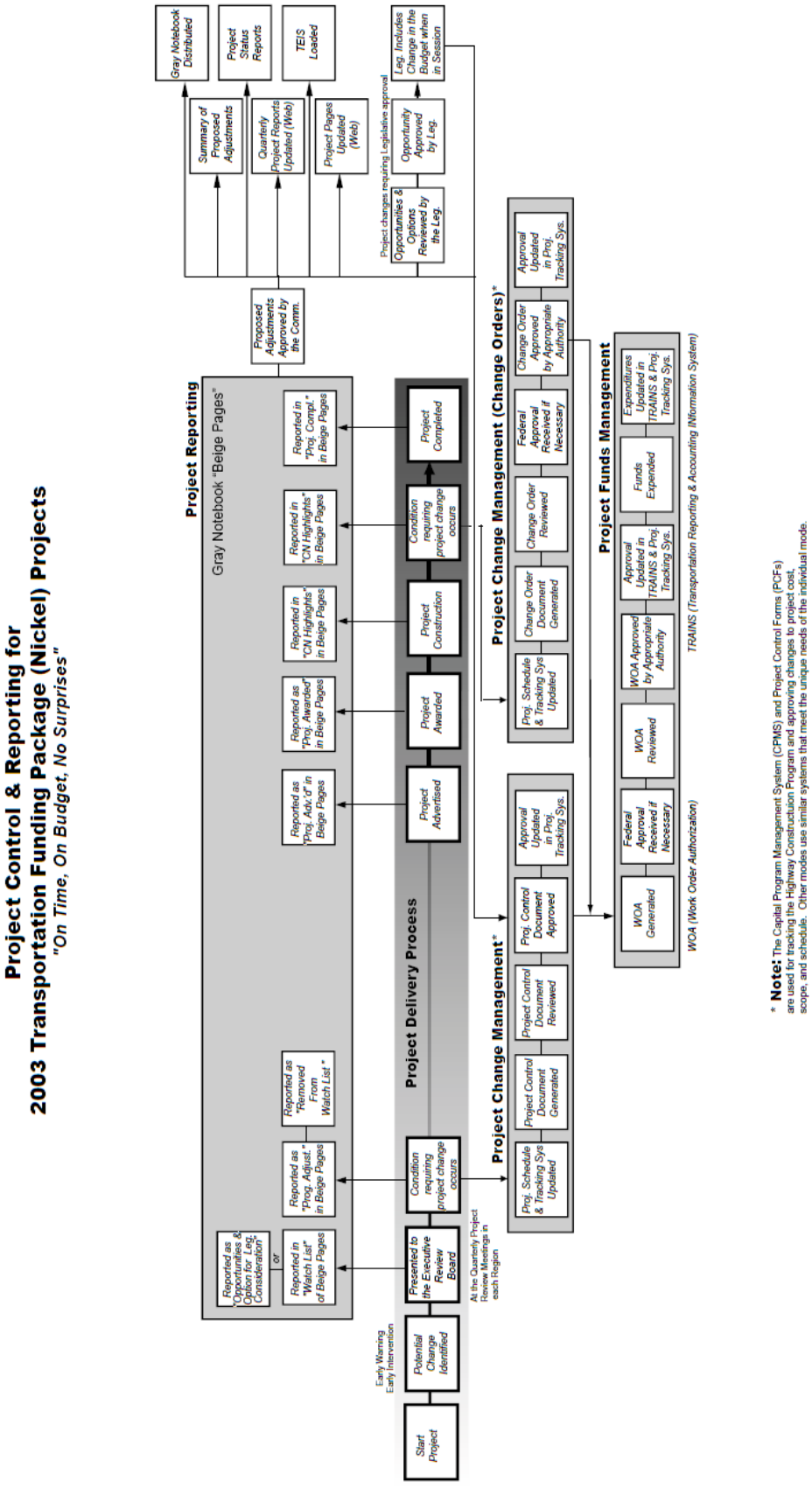

Figure 9. Components of WSDOT's Project Control & Reporting System for Nickel Projects

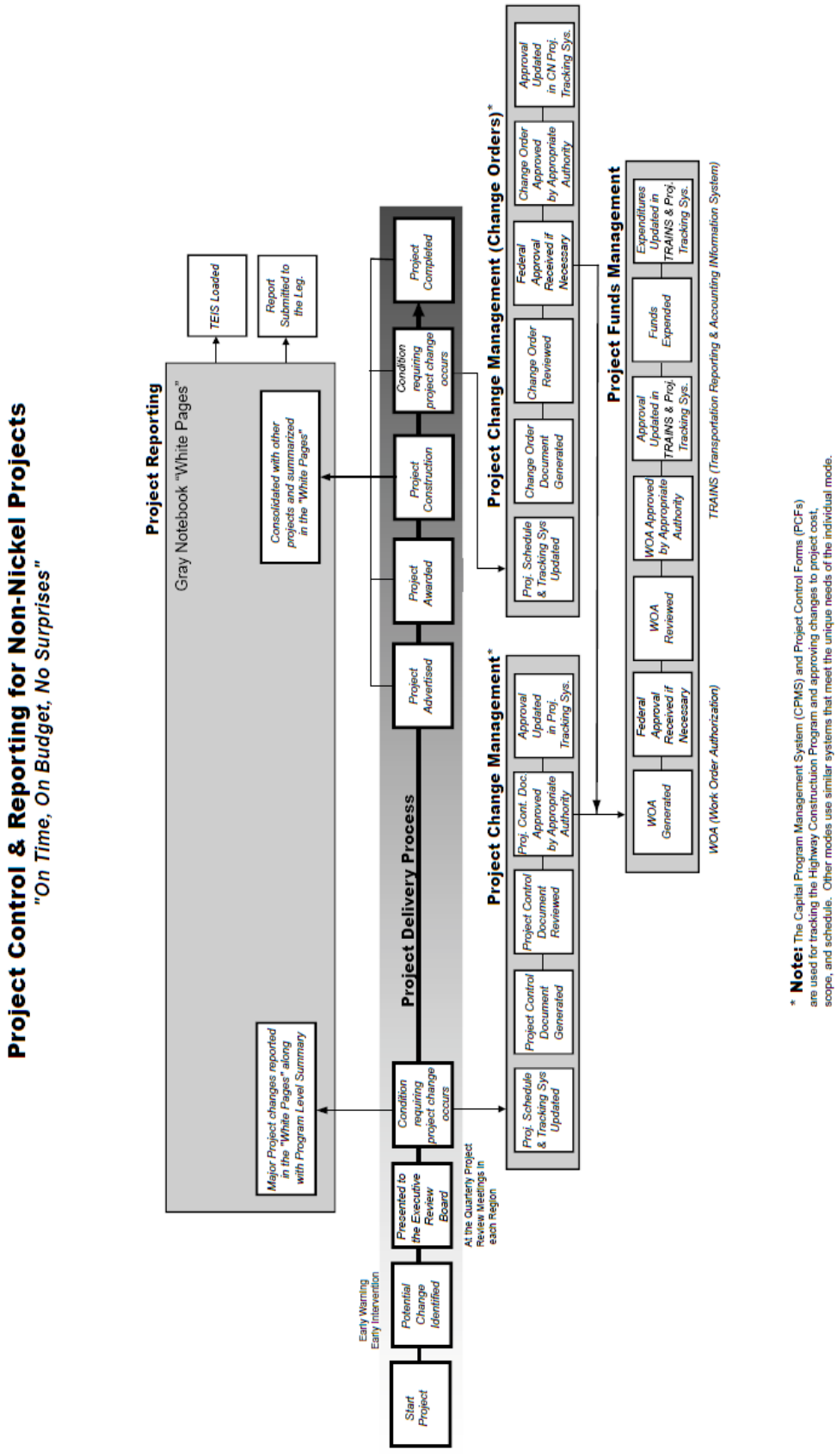

Figure 10. Components of WSDOT's Project Control & Reporting System for Non-Nickel Projects

The Executive Review Board performs many of the functions formerly done by the Department Project Screening Board. For non-Nickel projects, a proposed change is reviewed by the program managers and approved at various levels in PC&R depending on the significance of the change (as indicated by cost and percentage thresholds). If the change is major, it is forwarded to the Executive Review Board to deal with proposed change. For Nickel projects, all changes are reviewed by the Executive Review Board for submission to either the Legislature of Transportation Commission for approval.

The Executive Review Board has been structured to provide early, continuous project monitoring and control. The primary forum for the Executive Review Board's activities are the Quarterly Reviews held in each of the six WSDOT regions and with each mode.

Mid-Quarter Reviews

At the end of the second month of each quarter, the Assistant Director of PC&R and the Headquarters Improvement and Preservation Program Managers visit each region to review the status of each highway program. These meetings provide the Headquarters and regional program managers the opportunity to discuss at a working level issues surrounding program delivery. These meetings are semi-formal with a standard agenda centered around discussions on current program levels, strategies to bring programs into balance if necessary, major project issues that may be evolving that may impact program delivery, and any process issues that need to be addressed to improve the management process. These meetings provide a transition from routine, day-to-day management operations to the formal executive review process in the Quarterly Reviews that follow. They also provide the Headquarters managers an advanced look at what the senior managers will be hearing about the projects at the Quarterly Reviews and a coordinated update on the current program status and strategies.

Quarterly Reviews

Whereas most project control and reporting systems focus on tracking project progress as expenditures are incurred, and comparing them against plan, WSDOT has added a forward-looking element to its integrated system: the Quarterly Review process.

The Quarterly Reviews are WSDOT's first major tracking activity and includes all transportation programs and modes. A critical element in WSDOT's reporting and accountability the Quarterly Reviews are face-to-face meetings held for each mode and region prior to the close of each quarter. The Executive Review Board visits each of the Department's six regions, Urban Corridors Office, and each of the modes. The half- to full-day meetings are structured around reports on each region or mode's Nickel projects, regardless of performance status (that is, reports are required for projects that are proceeding with no variance from the baseline as well as for those that are experiencing budget or construction challenges), other projects of regional or statewide significance, and overall program delivery. The format for these meetings generally centers on project presentations by the responsible project engineer or project manager, as well as program-level reports by program managers, regional administrators or their modal equivalents. Proposed changes to project scope, schedule and budget within the Executive Review Board's purview (i.e., that do not require commission or legislative approval) are discussed at these meetings for subsequent approval through the Project Control Form process.

Quarterly Review Meetings serve the functions once performed by the WSDOT Department Project Screening Board. The new Quarterly Reviews provide department executives a firsthand, detailed understanding of the modes' and regions' performance on all projects. They constitute an "early warning system" that allows WSDOT to anticipate and manage project and program issues more proactively. Meanwhile, these meetings provide additional benefits, such as the opportunity for the regions and modes to strategize jointly with executives on the best way to address project challenges—both individually and within the context of overall program delivery.

The intent of the Quarterly Reviews is to anticipate and identify issues or opportunities likely to impact regional or modal, and by extension, enterprise wide program delivery. By visiting the regions on a regular basis, PC&R has direct communication with the regions, and a much clearer sense of upcoming issues, as opposed to attempting to deal with cost overruns or schedule delays after it is too late to avert problems.

Reports

WSDOT develops three primary types of reports: internal, external, and computerized/Internet reports.

Internal Reports

WSDOT uses a variety of standard reports for the management of its projects, programs, and operations on a day-to-day basis. These reports track project expenditures and schedules in detail and provide program managers and WSDOT senior managers information necessary to keep informed of the status of all programs, sub programs and sub categories. Subsets of these reports are aggregated for oversight purposes and external reporting.

External Reports

The *Gray Notebook* is the cornerstone of the external reporting system with the Nickel project monitoring and performance reported in the "Beige Pages" and the Improvement and Preservation Programs reported in the "White Pages." The *Gray Notebook* is provided to the Legislature, WSDOT management, and posted on the WSDOT website. Legislative staff is also provided the

Summary of Adjustments to Project Delivery and the *Project Status Reports* (Gantt Charts) that show the current status of each Nickel Projects expenditures and major delivery milestones.

In addition to hard copy reports, WSDOT also provides detailed project level information and delivery status via the Internet. In conjunction with the WSDOT's accountability web page, the Department provides two specific types of web pages reporting general project information and delivery status on all Nickel projects and non-Nickel projects of regional significance, QPRs, and Project Pages.

WSDOT's management operations are intended to be open and forthright. The Transportation Commission and legislative staff, as well as other authorized users, have independent, direct access to data and reporting on WSDOT projects and programs through TEIS. This direct access allows them to conduct independent queries and generate standard or customized reports as desired.

The *Gray Notebook*: The Keystone of WSDOT's Reporting System

WSDOT's integrated project control and reporting system is organized around a quarterly schedule that culminates in the production of the Secretary's *Gray Notebook*, editions of which are issued at the end of June, September, December, and March and posted on the web. The *Gray Notebook* is the official reporting mechanism to the Legislature on the Department's performance ("White Pages") and the current status of the 2003 Transportation Funding Package (Nickel) ("Beige Pages"). It contains several sections and subsections that track the entire life of a Nickel project and monitors all developing problems through final solution.

The *Gray Notebook's* Beige Pages

The most crucial aspect of the *Gray Notebook* is the section called the "Beige Pages" which is dedicated to reporting on the 2003 Funding Package. The "Beige Pages" constitute a summary of project-level reports on Nickel projects. They provide status on Nickel projects statewide including those experiencing cost, scope, or schedule adjustments, and conditions that are developing that many affect the cost, scope, or schedule. The "Beige Pages," which continue to evolve in format and content, are currently organized into the following four main subsections: "Current Highlights and Accomplishments," "Project Delivery," "Financial Information," and "Program Management Information."

Current Project Highlights and Accomplishments

This subsection is used to report on progress on the delivery of projects from the 2003 Transportation Funding Package. It includes items such as a listing of projects advertised, awarded, and completed ("Contract Advertising and Awards") and highlights of projects under construction ("Construction Highlights").

Project Delivery

This subsection of the "Beige Pages" is used to account for changes in Nickel Package project scopes, schedules, and budgets ("Program Adjustments to Delivery Planning") and provide advanced warning of developing conditions that could result in changes to project cost, scope, and schedule ("Watch List"). It also includes recommended project changes for approval by the legislature ("Opportunities and Options for Legislative Consideration"). Project changes may be due to a wide range of factors, including increased right of way costs, and anticipated cost decreases, which may be due to project efficiencies identified through value engineering.

Financial Information

Included in this subsection are regularly updated revenue forecasts for the Nickel Account and the Multimodal Account. These updates reflect actual revenue collection to date as well as updated projections based on new and revised economic variables. Also covered in this subsection are plans for bond issues and debt service, along with a summary financial plan that balances planned expenditures against forecasted revenues.

Program Management Information

This topical section is used to discuss various WSDOT issues in program delivery and how the agency is working to address them. Major topics have included WSDOT's project delivery hardware and software capabilities; delays and cost increases in right of way acquisition; utilities relocation; environmental permitting and compliance; and consultant utilization.

Gray Notebook's "White Pages"

Non-Nickel projects are rolled up by program and reported at the program-level in the *Gray Notebook* "White Pages." The *Gray Notebook* "White Pages" provide the quarterly status of the Improvement, Preservation, and Modal Programs, and the Nickel Package. Program expenditures and project delivery are reported against the budget. Unlike Nickel projects, non-Nickel projects are reported by exception, that is, they are only reported if there are substantial changes in the project scope, schedule or budget.

WSDOT performance measures reported outside the *Gray Notebook's* "Beige Pages" include a variety of subject areas, including the following:

- Highway Construction Program (Improvement & Preservation Programs)
- Washington State Ferries Update (Non-Nickel)
- Rail Updates (Non-Nickel)

- Worker Safety
- Highway Safety Improvements
- Asset Management
- Highway Maintenance
- Incident Response

Summary of Adjustments to Project Delivery

The "Beige Pages" section of the *Gray Notebook* is the official reporting tool for the current status of all projects in the 2003 Transportation Funding Package (Nickel Program). Supplementing the *Gray Notebook* is the *Summary of Adjustments to Project Delivery*, a detailed expenditure report provided to the legislative staff that summarizes the expenditure status for each Nickel project over five biennia. Also referred to as the "Variance Report," the report provides any variance in estimated cost between the current estimated project cost and the approved budget by biennium and supported by a brief explanation for the change.

Project changes are identified using ten general descriptions with short explanations for those changes that require further explanation. The report also provides the total biennial variance for each of the five biennia of the funding package. The report is run at the end of each quarter, reviewed and approved by the Transportation Commission, and delivered to legislative staff along with the *Gray Notebook*.

The *Summary of Adjustments to Project Delivery* has become a key document used by the Legislature in monitoring the Nickel Program, approving major project changes, and setting biennial funding levels.

Project Status Report

A modified version of the *Summary of Adjustments to Project Delivery* has been created by adding milestone information to each project in the form of a timeline to create the *Projects Status Report*, commonly referred to as the "Gantt Charts." This report provides the current status of six milestones, as established in agreement with the legislature, in comparison to the milestones established with the original biennial budget.

Computerized/Internet Reports

Project Pages

Detailed online Project Pages are maintained for all major WSDOT projects. These web-based Project Pages provide the interested public "one-stop shopping" for each project, with a wide range of information including the project's overall purpose, funding components, milestone status, risk challenges, links to other relevant projects and WSDOT resources, and graphics such as maps, photos, and design drawings.

Quarterly Project Reports

Each quarter, all activities associated with projects described in Project Pages are summarized in QPRs, which are accessible via a link from the Project Page. The standardized one-page summaries contained in the QPR page provide data beyond that which is available on the Project Page, including graphs depicting planned expenditures vs. actual expenditures over time. QPRs also provide standardized data on project costs and cash flow, which enables comparisons across projects and programs.

The timeline for conducting quarterly reviews and preparing quarterly reports is shown in Figure 11.

TEIS: Independent Access to WSDOT Performance Information

The Transportation Executive Information System (TEIS) is a suite of programs designed to facilitate legislative planning and oversight. It provides budget preparation and executive summary information about a variety of activities to the LTC and transportation agency managers. The overall system objectives for TEIS are as follow:

- Serve as the central source for financial, project, and performance data for the LTC and transportation agencies.
- Ensure legislative access to information needed for budget planning and oversight.
- Provide a variety of what-if analysis tools to - support legislative needs for development and evaluation of various budget scenarios.
- Serve as the main instrument for reporting agency commitments on dollars and performance and provide consistent data for the legislature and agency managers to track expenditures and - monitor performance.
- Provide reliable, easy-to-use, access and - uninterrupted service.

Data in TEIS are drawn directly from WSDOT's CPMS. TEIS displays information in a graphical, easy-to-use format. Financial and project information is available as well as the *Transportation Resource Manual*. TEIS includes the following six applications:

Fund Balance and Fee Modeling: What-if analysis tools for both revenues and expenditures to help ensure accurate legislative budget planning. This application is primarily used by the LTC. It provides the LTC with critical information during the -legislative session.

Capital Projects and Facilities Reporting: Lists of projects during the budget cycle to provide the Legislature, agencies, and ultimately, the public, with information on

which projects are included in a given budget scenario. This application also includes ongoing project monitoring. This application is used both by the LTC and agency managers. The planning information is of critical importance to the LTC during the legislative session.

Fiscal and Performance Monitoring: Financial tracking and performance measures to track progress in meeting goals. This application is of critical importance to agency managers. It is used by the LTC to monitor agency budget expenditures and performance against plans.

Table 3 contains summary data on the elements of WSDOT's quarterly reporting process.

Project Control & Reporting Process:

Highway Preservation & Improvement

Approved Project Control Forms (PCF) and the Programmatic Variance Report will be used to update the Gray Notebook Beige pages each quarter as follows:

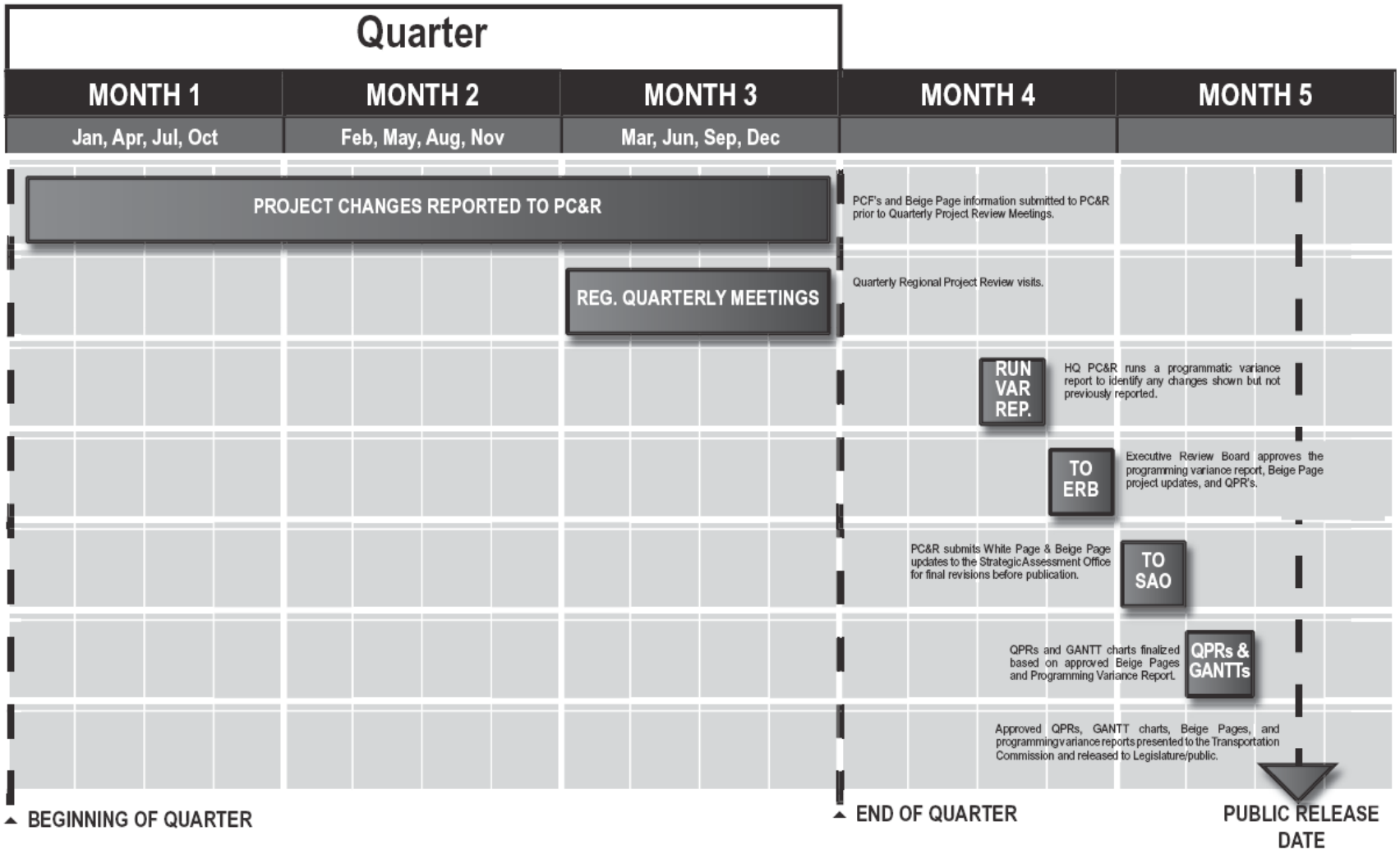

Figure 11. Project Control and Reporting Process

Table 3. Summary of WSDOT's Quarterly Reporting Package

Report	Initiator	Schedule
Gray Notebook **"Beige Page" Updates**	PC&R uses approved PCFs, notes from Quarterly Project Review Meetings, and regional submittals to develop draft inputs for the Beige Pages. Draft inputs are also provided to the Strategic Assessment Office for informational purposes only.	PC&R submits these to the WSDOT Executive Review Board for review/approval by the 22nd of October, January, April, and July.
Gray Notebook **"White Page" Updates**	PC&R uses internal reports, databases (e.g., CPMS), and tracking systems to analyze and summarize program delivery performance for inclusion in the *Gray Notebook*.	PC&R submits these to the WSDOT Executive Review Board for review/ approval by the 22nd of October, January, April, and July
Summary of Adjustments to Project Delivery **("Variance Report")**	PC&R reviews Summary of Adjustments to Project Delivery to ensure that Project Control Forms (PCFs) have been received for all projects breaking established thresholds. A copy of the Summary of Adjustments to Project Delivery is provided to each mode (Highway, Ferries, Rail, Traffic Operations, and Facilities) for processing. Regions are contacted for any missing information.6	PC&R generates Summary of Program Adjustments on the 15th of the month following the end of each quarter.
Project Status Report **("Gantt Chart")**	PC&R produces file containing "Gantt" charts for all Nickel Projects each quarter.	Updates submitted to the Legislative staff by the 15th of November, February, May, and August.
Project Web Pages	After the WSDOT Screening Board approves the "Beige Page" sections and *Summary of Adjustments to Project Delivery*, regions update the Project Pages and post them to the web.	Regions update by the 15th of the month following the end of each quarter. Posted to the web following approval of the program changes by the Transportation Commission and the Gray Notebook.
Quarterly Project Reports	Regions update QPRs and provide to the PC&R by the 15th of the month following the end of each quarter for review. After the WSDOT Screening Board approves the "Beige Page" sections and Summary of Program Adjustments, regions update the QPRs and post them to the web.	Regions update by the 15th of the month following the end of each quarter. Posted to the web following approval of the program changes by the Transportation Commission and the *Gray Notebook.*

6 Regions will provide copies of PCF used to approve changes within region approval levels during the Quarterly Regional Project Review visits. PC&R will use these PCF copies to update the Programmatic Variance Report and Beige Pages for changes approved at the region level).

Shown in Table 4 is the complex web of databases, programs, and information systems that are used at WSDOT in the project control and reporting process. The functions served by these systems are categorized as follows:

- Project Development,
- Project Funds Management,
- Project Change Management, and
- Project Reporting.

As indicated by the numerous entries in the table, there are many systems that support capital program management in WSDOT. Although each system in and of itself may be reasonably meeting its focused objective, the challenge of developing a more integrated and comprehensive project control and reporting system is complicated by a number of factors.

These systems have been developed independently over decades with no clear overall integration strategy. The reporting of meaningful information is complicated because systems operate in multiple technical environments using multiple technologies (mainframe, client server, etc.), which leads to data inaccessibility and inconsistency. Meanwhile, management information must be accurate, consistent, and timely to ensure confidence in WSDOT's ability to deliver the construction program.

A request to develop a strategy and study these systems in order to migrate and modernize these systems was funded by the legislature in the 03-05 biennium, but was withdrawn in the '04 supplemental session. The Department is resubmitting the study for funding in the 05□07 biennium. It is considered essential to develop a comprehensive "systems roadmap" in order to optimize the benefit provided by this technology.

The various information systems that are used to manage WSDOT' project control and reporting process and the programs they support are summarized in Table 4, described in the text that follows, and depicted in Figure 12.

Information Systems Used Across WSDOT

Capital Program Management System (CPMS)

WSDOT's Capital Program Management System (CPMS) is a mainframe application used to track the schedule and cost of projects in WSDOT's Improvement and Preservation programs. CPMS was developed by WSDOT in the 1980s in recognition that the Department needed a better tool for managing, developing, and delivering its construction programs. The multiple mainframe systems used to support program management efforts until then did not interact effectively with one another, nor did they provide an adequate means for planning and monitoring construction projects, for managing overall program accomplishments, or for responding to changes in state or federal allocations. The first pieces of CPMS came online in 1987 and the full system was implemented in 1988. During the 1990s, the system has continued to be enhanced to meet changing needs.
While CPMS was not designed to manage individual project details, it does provide a tool for planning and monitoring the overall construction program, measuring progress, and delivering the program. CPMS provides the following functionality:

- **Schedule**. High-level project milestones are established and maintained.
- **Costs**. Costs are stored by phase and dollars are aged over the life of the project phase. Staff set up and authorize work orders.
- **Workforce**. Workforce estimates can be -developed and used at the program level to -predict needs for the coming biennium.
- **Change history**. CPMS is used to record and monitor changes in scope, schedule, and cost for approved projects.
- **Program approval**. CPMS is used to request project phase approval and to record the type of program approval granted and key project data at the time of approval.

Table 4. WSDOT Computer Applications by Business Process

Mode	Project Reporting	Project Development	Project Change Management	Project Funds Management
Highways	TEIS CPMS EBASE QPR Project Web Pages	CPMS Project Summary PATS PDIS	TEIS (Variance Report) CPMS (Nightly News)	TRAINS/FIRS CPMS Electronic WOA (Acorde) CAPS
Ferries	TEIS TRAINS/FIRS WSF Life Cycle Cost Model CPED CPED EBASE P3EC (Primavera) CPMS7 QPR Project Web Pages	TEIS Project Summary WSF Life Cycle Cost Model BASS-CBS TAPS	TEIS (Variance Report)	TRAINS/FIRS CPED WSF Checkbook WOA (Manual) CAPS
Rail	TEIS TRAINS/FIRS QPR Project Web Pages	TEIS	TEIS (Variance Report)	TRAINS/FIRS Rail Capital Program/Project Tracking WOA (Manual)
Traffic	TEIS CPMS QPR	TEIS CPMS	TEIS (Variance Report)	TRAINS/FIRS CPMS Electronic WOA (Acorde)
Facilities	TEIS TRAINS/FIRS QPR (Quarterly Program Delivery Report)	TEIS Facilities Condition Report Program Delivery Plan Project Prospectus BASS-CBS	TEIS (Variance Report)	TRAINS/FIRS Facilities WOA System Program Expenditure Reports Project Status Reports
Local Programs	STAR			TRAINS/FIRS

7 CPMS is being phased out at WSF because it does not meet its project needs, a determination resulting from the Findings of WSDOT's Capital Program Management Process Improvement Team, which conducted a study in 2002.

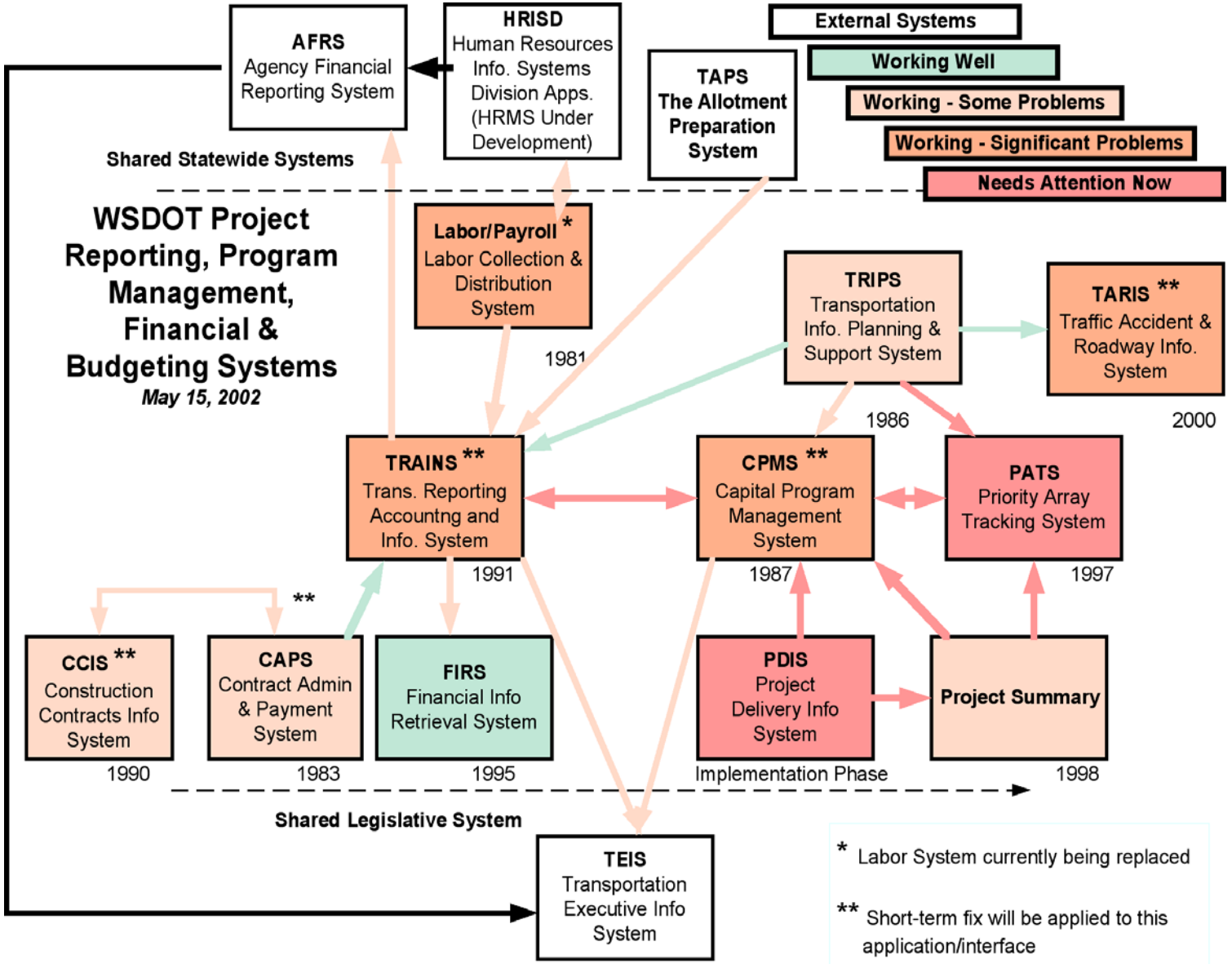

Figure 12. WSDOT Project Reporting, Program Management, Financial and Budgeting Systems

The system provides data to program managers, program management staff, region administrators, project engineers, and transportation commissioners.

Transportation Accounting and Reporting System (TRAINS)

TRAINS accounts for all WSDOT revenues, -expenditures, receipts, disbursements, resources, and obligations. It is a highly customized version of an American Management Systems (AMS) software package. The system includes WSDOT's in-house budget tracking system, TRACS.

TRAINS is WSDOT's core project accounting system for storing and managing expenditures. It was installed in 1991. A ledger-based accounting system, TRAINS is used by region Program Management to check work order steps, overruns and under-runs, to obtain organization code and control section data, and check federal aid agreement numbers and details. Program Management also use it to track agreement costs, status, and vendor and manager information. Work orders are set up and adjusted in TRAINS, and it is used to evaluate work order authorizations, to check work order set ups, and fund source authorization. TRAINS data are fed to CPMS every night.

A Work Order Accounting Plan (a hard copy report) is used by regions to verify final work order closures and to make sure that TRAINS and CPMS are in agreement. CPMS processes the Nightly News report every night to monitor and track project level changes.

Contract Administration and Payment System (CAPS)

The CAPS system maintains administrative and payment information about highway and ferry construction contracts. The work order manager uses CAPS to initiate payments to be generated to prime contractors and escrow agents. The system creates payment vouchers to pay contractors by feeding data to TRAINS. Following are specific CAPS functions:

- Track construction costs by bid item,
- Calculate sales tax owed at appropriate rate for project location,
- Provide ability to monitor for required insurance and retainage,
- Create payment vouchers.

Transportation Executive Information System (TEIS)

TEIS is used for legislative budget planning and oversight. It supports budget preparation and provides summary information about transportation activities to the transportation committee staff from both house and senate. System functions include the following:

- Fund balancing and fee modeling;
- Analysis tools for both revenues and expenditures;
- Display of capital project lists for multiple -funding scenarios for all transportation modes;
- Ongoing project, expenditure, and performance monitoring.

The Variance Report, used by all modes for project change management, is derived from TEIS. This report compares original budgets by project with current estimates.

Priority Array Tracking System (PATS)

PATS collects, maintains, and tracks WSDOT's capital highway program deficiencies to support development of the capital highway construction program. The system is used by regional and Headquarters program management staff to identify the state's highest priority deficiencies in order to scope projects that will address them.

Project Summary

The Project Summary system contains project information collected during the initial part of the project scoping process. It documents WSDOT's commitment for scope, schedule, and budget of work and communicates design, programming, and environmental decisions. System functions include the following:

- Documenting results of the project definition phase;
- Documenting the project's link to the highway safety plan;
- Maintaining environmental review comments; and
- Recording decisions made to date and the final design decision summary.

Estimate and Bid Analysis System (EBASE)

EBASE is used to develop estimates and reports for transportation construction projects, to provide easy entry of contractor bid data, and to award apparent successful bidders on those estimates. It also automatically uploads estimate and bid information to the CAPS system. The system provides WSDOT with accurate engineer's estimates and contract bid history information.

Electronic Work Order Authorization (WOA)

Although the WOA review process is complex, and the specific approval flow varies by region and by mode, WSDOT has implemented a web-based system called ACORDE that automates the WOA process, from initial input, through tracking, review, and approval.

Those initiating a work order authorization request do so online, using a preset template that prompts them to enter the required data, depending upon the phase and reason for the request. The system then determines to whom, and in what order the request needs to flow for review and approval. Those to whom the work order authorization request is sent are notified automatically that a request awaits their action in a queue. Once the receipt has been acted on, they indicate their sign off and the ACORDE system automatically routes it along to the next person in the review chain. Throughout the process, the status of any given work order authorization request can be tracked.

Among the benefits of automation of the work order authorization are the following:

- It allows concurrent processing of the same - document, thus streamlining the approval process;
- It minimizes process error in that the document is always routed to the correct party in the correct sequence; moreover, electronic transmission eliminates the possibility that paper is lost;
- The forms and process, as well as instructions, are always accessible online;
- Data about work order authorization is gathered automatically, which facilitates analysis;
- In allowing the status of a given document to be reviewed at any time, bottlenecks and delays can be identified and resolved;
- It provides reviewers with a standard means of organizing their work order-related tasks;
- Any improvements to the process can be effected far more easily; rather than teaching people new routing flows, they can be programmed into the system.

In short, ACORDE allows WSDOT to accommodate process differences between modes and regions while ensuring uniform data input and process outcomes.

Local Agency Project Tracking System (STAR)

STAR is a federal aid project tracking system used by Highways and Local Programs. The system is used to track federal funds and operational project compliance for federally funded projects managed by local agencies. This system is now six years old, and needs redevelopment to keep up with changes in the federal aid legislation, as well as increased management reporting and tracking requirements.

Budget and Allotment Support System (BASS)

BASS brings all components of Washington State's budget and allotment systems under one web-based umbrella at the Office of Financial Management (OFM). The Capital Budget System portion of BASS allows development and submittal of **WSF and Facilities** capital budget request online.

Information Systems Specific to the Rail Capital Program

The rail program is distinct from other WSDOT programs because the 18th Amendment to the State Constitution precludes the use of gas tax dollars from the Motor Vehicle Fund for non-highway or ferries-related purposes, including rail. As the program is smaller than the highway program, more centralized, and deals primarily with outside entities (publicly or privately owned railroads and port districts, primarily), fewer IT tools are needed to monitor, report, and deliver rail projects.

Rail uses a database called the Rail Capital Program/Project Tracking for Project Funds Management and Project Reporting. This database houses the financial budget and scheduled milestones for each project and phase. The user can track spending through the importation of TRAINS data accessed through FIRS, drawing the data by Work Order Number and Group Number, collectively called the Job Number. This allows the user to monitor spending at any level from the overall program down to the Job or Task level.

Information Systems Specific to Capital Facilities

Facilities Program Delivery Plan

Once the biennial appropriations are made by the Legislature, the CIPP and TEIS tables are revised to match. A biennial Program Delivery Plan (Gantt charts with funds aged by month and workforce projects) is developed and reviewed monthly by Facilities program management.

Facilities Project Prospectus

Like the highway construction program's Project Summary System, the Facilities Project Prospectus System defines the scope, schedule, and budget for each facilities project.

Facilities Condition Assessment

This system provides an annual systematic assessment of building and site components, resulting in numerical condition ratings, and ranking of facilities renovation and replacement projects.

Facilities Work Order Authorization System

This system allows the Facilities Office to authorize new work orders for facilities projects and to assign work order numbers prior to submitting them to be entered into WSDOT's accounting system (TRAINS).

Facilities Program Expenditure Reports

These reports detail Facilities project expenditures by work order with program level summaries. Data are extracted monthly from TRAINS.

Facilities Project Status Reports

These reports provide financial status by project, showing expenditures to date, current expenditure authorizations and the appropriation balance by project for facilities projects.

Quarterly Program Delivery Report

This report displays project- and program-level planned vs. actual expenditures for WSDOT's Facilities Program. Data from the Facilities Condition Assessment are extracted quarterly from TRAINS. The deficiency backlog is extracted annually form the Facilities Condition Assessment Database.

Information Systems Specific to Washington State Ferries

WSF uses a number of tools to develop, budget, program, manage funds, manage change, and report on the WSF Construction Program. Key activities supported information systems include program and project development (needs identification, project definition and selection, and project budgeting and programming), funds management, project change management, and project reporting.

Washington State Ferries' Life Cycle Cost Model

The Life Cycle Cost Model is WSF's core system for program and project development, management and reporting. The Ferry System delivers its services through an infrastructure of terminals and vessels. Theses facilities are composed of various systems. WSF has built its capital investment process around an approach that focuses on replacing or refurbishing terminal and vessel systems that reach the end of their life cycle. WSF uses the Life Cycle Cost Model to identify capital needs; categorize needs and projects according to policy areas established by the Legislature, the Office of Financial Management, the Transportation Commission and regulatory agencies; define projects (solutions to needs) in terms of scope, cost, and schedule; develop project lists; forecast performance results (satisfaction of needs) expected from investments; establish biennial control numbers for monthly project expenditure demand forecasts; and record approved changes to the project list.

Washington State Ferries' Capital Program Expenditure Demand (CPED) System

The Life Cycle Cost Model records the allocation of legislative appropriations (biennial spending authority) to projects in the WSF Construction Program. The Capital Program Expenditure Demand (CPED) System establishes the monthly expenditure requirements of each project. The CPED System aggregates expenditure demand of all projects to program-level allotments (monthly spending plan approved by the Office of Financial Management). The CPED System merges planned program/project expenditures with accounting information on actual program/project expenditures. The resulting CPED Report is the primary tool used by WSF to conduct variance analysis of program/project delivery. The report addresses both fiscal, FTE, and performance variances from plan.

Washington State Ferries' Capital "Checkbook"

WSF uses the "Checkbook" to control work order authorization of funds to project managers. The "Checkbook" looks to the Life Cycle Cost Model for total biennial spending authority allocated to projects. Project managers submit work order authorization requests to obtain approval to spend funds on their projects. The system ensures that WSF's Chief Executive Officer does not authorize funds to project managers that exceed the project's programmed funding. It is also used to monitor whether project managers are overspending authorized funds.